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# Instruction Manual
# Part 2a

## Instructions for Classifying the Underlying Cause of Death, 1985

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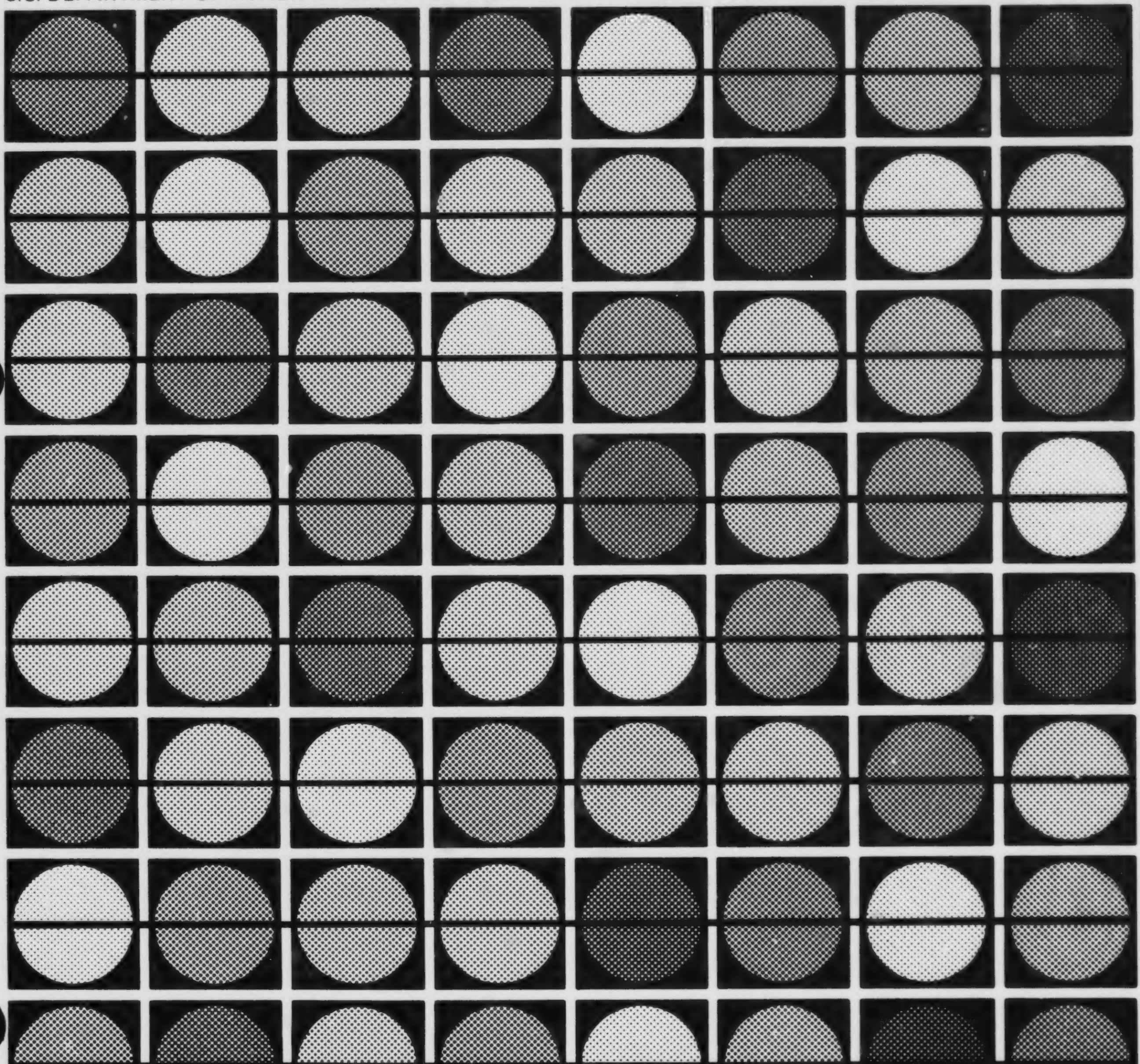

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This instruction manual was prepared by the Data Preparation Branch in collaboration with the Division of Vital Statistics. Questions regarding this manual and related coding problems should be directed to the Data Preparation Branch, National Center for Health Statistics, P.O. Box 12214, Research Triangle Park, North Carolina 27709. Questions concerning analysis of marriage data should be referred to the Marriage and Divorce Statistics Branch, Division of Vital Statistics, National Center for Health Statistics, Center Building, Prince George Center, 3700 East-West Highway, Hyattsville, Maryland 20782.

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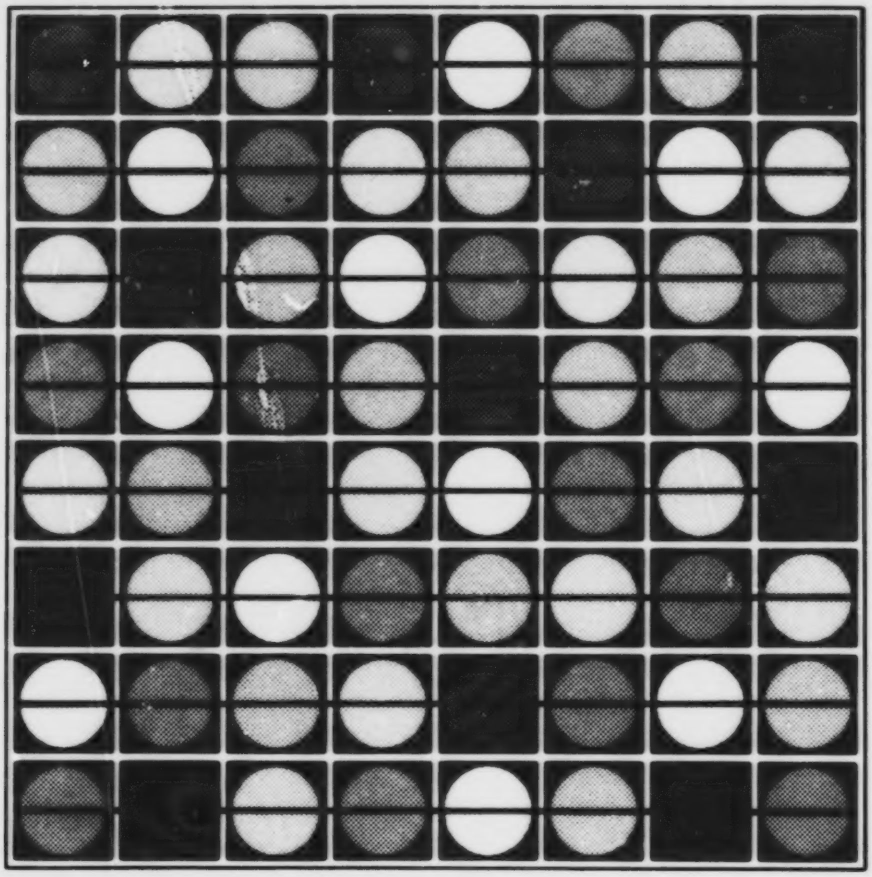
# Instruction Manual Part 2a

## Instructions for Classifying the Underlying Cause of Death, 1985

## Vital Statistics

Data Preparation



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Center for Health Statistics

Hyattsville, Maryland
September 1984

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# INSTRUCTIONS FOR CLASSIFYING THE UNDERLYING CAUSE OF DEATH, 1985

## INTRODUCTION

The National Center for Health Statistics (NCHS) is responsible for the compilation and annual publication of national statistics of causes of death. In carrying out this responsibility, NCHS adheres to the World Health Organization Nomenclature Regulations. These Regulations require that the coding of causes of death be in accordance with the current revision of the International Statistical Classification of Diseases, Injuries and Causes of Death (ICD) and that the selection of the Underlying cause of death for primary mortality tabulation be in accordance with the international rules.

The Ninth Revision of the ICD (ICD-9) is being used for classifying causes of death beginning with deaths occurring in 1979. This revision of the classification is published by the World Health Organization and consists of two volumes. The Tabular List, Volume 1, contains a list of three-digit categories with four-digit subcategories of diseases and injuries and a tabular list of inclusions. It also contains the Supplementary Classification of External Causes of Injury and Poisoning (E Codes). Volume 1 also includes the international rules and notes for use in classifying and tabulating underlying cause of death data. Volume 2 contains a complete alphabetic index.

The basic purpose of this instruction manual is to set forth detailed concepts and instructions for using the ICD-9 for classifying causes of death in the United States. The manual should be used in conjunction with Volumes 1 and 2. This manual is also intended as a tool for users of mortality medical data in proper data interpretation and analysis. This manual is not to be used for coding cause of fetal death.

This instruction manual also sets forth the process that is followed by NCHS and certain States in assigning the underlying cause of death. This assignment is made through computer applications as a byproduct of the full medical information on death certificates that is manually coded for the production of multiple cause of death statistics. The computer system, Automated Classification of Medical Entities (ACME), follows the same international rules and sequential procedure used in manual classification of underlying causes of death.

Further information on the ACME system is contained in Part 2b, NCHS Instructions for Classifying Multiple Causes of Death, 1985 and Part 2c, NCHS Decision Tables for Classifying the Underlying Cause of Death, 1985. The Decision Tables in Part 2c are published for two purposes: to document decisions contained in the ACME system and to serve as a comprehensive guide for cause-of-death coders in standardizing coding practices used in selecting the underlying cause of death. Instructions for using these tables are included in Part 2c.

Changes in this manual consist of:

There have been no changes in the 1985 edition of this manual except for typographical changes.

## DEFINITIONS

The terms defined in this section are used throughout the manual.

A reported sequence ------- two or more conditions on successive lines in Part I, each condition being an acceptable cause of the one on the line immediately above it.

Accident in medical care -- a misadventure or poisoning occurring during surgery or other medical care.

Combination code ---------- a third code which is the result of the merging of two or more codes.

Conflict in linkage ------- when the selected underlying cause links concurrently "with" or in "due to" position with two or more conditions.

Direct sequel ------------- a condition which is documented as one of the *most* frequent manifestations, consequences, or complications of another condition.

"Due to" position --------- When there are entries on more than one line in Part I with *only one entity* on the lowest used line in Part I, the single entity on the lowest used line is considered to be in a "due to" position of *all entries* entered above it. When there are entries on more than one line in Part I, each entity on the lower of two lines is considered to be in a "due to" position of each entity on the next higher line.

Entity -------------------- a diagnostic term or condition entered on the certificate of death that constitutes a codable entry.

Error in medical care ----- a misadventure or poisoning occurring during surgery or other medical care.

Further linkage ----------- another step in the linkage process which must be made to conform with the classification after one or more linkages have been made.

Maternal death ------------ the death of any woman while pregnant or within 42 days (less than 43 days) of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Old maternal condition ----- a maternal condition that causes death more than 42 days after termination of pregnancy or causes any chronic condition.

One-term entity ------------ an entity of one word or two or more contiguous words on a line that is classifiable to a single code in ICD.

Preference code ------------ a code which has priority over other code(s) which may also qualify as a combination code.

Perinatal periods ---------- the period is that which extends from the gestational age at which the fetus attains the weight of 1000 g (equivalent to 28 weeks gestation) to the end of the sixth completed day (168 hours) of life.

Properly positioned -------- condition(s) placed in an appropriate order to form a sequence of events.

Selected underlying cause of death ----------- a condition which is chosen either temporarily or finally by the application of an international selection rule.

Sequence ------------------- a series of conditions having continuity and connection in which one follows the other(s) in the order of events.

Trivial condition ---------- a condition which will not of itself cause death.

Underlying cause of death -- the disease or injury which initiated the train of morbid events leading directly to death or the circumstances of the accident or violence which produced the fatal injury.

# SECTION I

## MEDICAL CERTIFICATION

The U. S. Standard Certificate of Death provides spaces for the certifying physician, coroner, or medical examiner to record pertinent information concerning the diseases, morbid conditions, and injuries which either resulted in or contributed to death as well as the circumstances of the accident or violence which produced any such injuries. The medical certification portion of the death certificate is designed to obtain the opinion of the certifier as to the relationship and relative significance of the causes which he reports.

A cause of death is the morbid condition or disease process, abnormality, injury, or poisoning leading directly or indirectly to death. The underlying cause of death is the disease or injury which initiated the train of morbid events leading directly or indirectly to death or the circumstances of the accident or violence which produced the fatal injury. A death often results from the combined effect of two or more conditions. These conditions may be completely unrelated, arising independently of each other or they may be causally related to each other, that is, one cause may lead to another which in turn leads to a third cause, etc.

The order in which the certifier is requested to arrange the causes of death upon the certification form facilitates the selection of the *underlying cause* when two or more causes are reported. He is requested to report in Part I on line (a) the immediate cause of death and the antecedent conditions on lines (b) and (c) which gave rise to the cause reported on line (a), *the underlying cause* being *stated* lowest in the sequence of events. However, no entry is necessary on I(b) or I(c) if the immediate cause of death stated on I(a) describes completely the sequence of events.

Any other significant condition which unfavorably influenced the course of the morbid process and thus contributed to the fatal outcome but was not related to the immediate cause of death is entered in Part II.

IMMEDIATE CAUSE

PART I (a)______________________________

Due to, or as a consequence of

(b)______________________________

Due to, or as a consequence of

(c)______________________________

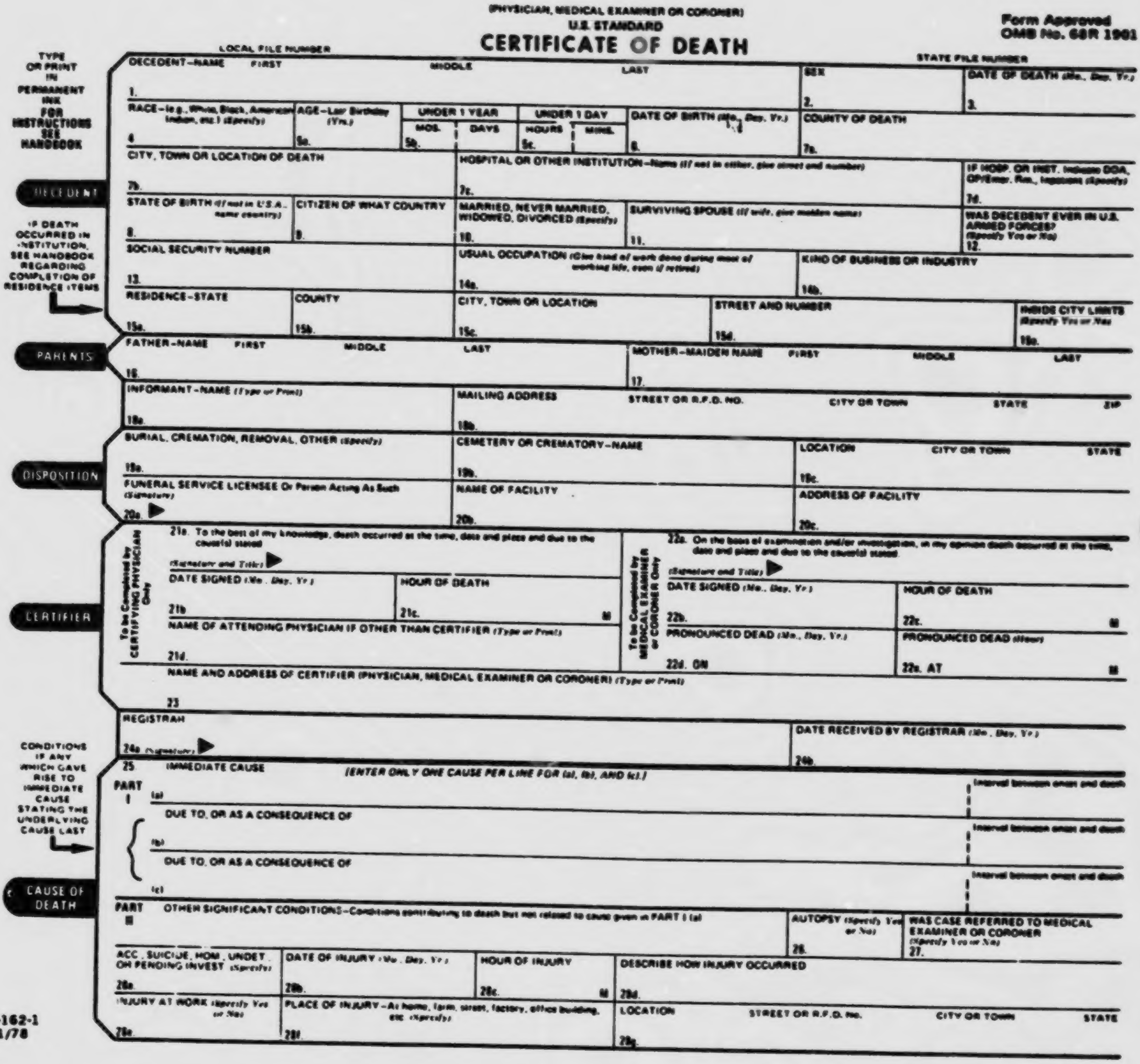
PART II OTHER SIGNIFICANT CONDITIONS -
Conditions contributing to death but
not related to cause given in Part I(a)

______________________________

ACC., SUICIDE, HOM., UNDET., OR PENDING INVEST.
(Specify)

# THE U.S. STANDARD CERTIFICATE OF DEATH

## COMBINED FORM FOR PHYSICIAN, MEDICAL EXAMINER, OR CORONER



(PHYSICIAN, MEDICAL EXAMINER OR CORONER)
U.S. STANDARD
**CERTIFICATE OF DEATH**

Form Approved
OMB No. 68R 1901

LOCAL FILE NUMBER
STATE FILE NUMBER

TYPE OR PRINT IN PERMANENT INK
FOR INSTRUCTIONS SEE HANDBOOK

**DECEDENT**

DECEDENT—NAME FIRST MIDDLE LAST 1.
SEX 2.
DATE OF DEATH (Mo., Day, Yr.) 3.
RACE—(e.g., White, Black, American Indian, etc.) (Specify) 4
AGE—Last Birthday (Yrs.) 5a.
UNDER 1 YEAR MOS. DAYS 5b.
UNDER 1 DAY HOURS MINS. 5c.
DATE OF BIRTH (Mo., Day, Yr.) 6.
COUNTY OF DEATH 7a.
CITY, TOWN OR LOCATION OF DEATH 7b.
HOSPITAL OR OTHER INSTITUTION—Name (If not in either, give street and number) 7c.
IF HOSP. OR INST. Indicate DOA, OP/Emer. Rm., Inpatient (Specify) 7d.
STATE OF BIRTH (If not in U.S.A., name country) 8.
CITIZEN OF WHAT COUNTRY 9.
MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (Specify) 10.
SURVIVING SPOUSE (If wife, give maiden name) 11.
WAS DECEDENT EVER IN U.S. ARMED FORCES? (Specify Yes or No) 12.
SOCIAL SECURITY NUMBER 13.
USUAL OCCUPATION (Give kind of work done during most of working life, even if retired) 14a.
KIND OF BUSINESS OR INDUSTRY 14b.

IF DEATH OCCURRED IN INSTITUTION, SEE HANDBOOK REGARDING COMPLETION OF RESIDENCE ITEMS

RESIDENCE—STATE 15a.
COUNTY 15b.
CITY, TOWN OR LOCATION 15c.
STREET AND NUMBER 15d.
INSIDE CITY LIMITS (Specify Yes or No) 15e.

**PARENTS**

FATHER—NAME FIRST MIDDLE LAST 16.
MOTHER—MAIDEN NAME FIRST MIDDLE LAST 17.

INFORMANT—NAME (Type or Print) 18a.
MAILING ADDRESS STREET OR R.F.D. NO. CITY OR TOWN STATE ZIP 18b.

**DISPOSITION**

BURIAL, CREMATION, REMOVAL, OTHER (Specify) 19a.
CEMETERY OR CREMATORY—NAME 19b.
LOCATION CITY OR TOWN STATE 19c.
FUNERAL SERVICE LICENSEE Or Person Acting As Such (Signature) 20a. ▶
NAME OF FACILITY 20b.
ADDRESS OF FACILITY 20c.

**CERTIFIER**

To be Completed by CERTIFYING PHYSICIAN Only

21a. To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated.
(Signature and Title) ▶
DATE SIGNED (Mo., Day, Yr.) 21b
HOUR OF DEATH 21c. M
NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print) 21d.

To be Completed by MEDICAL EXAMINER or CORONER Only

22a. On the basis of examination and/or investigation, in my opinion death occurred at the time, date and place and due to the cause(s) stated.
(Signature and Title) ▶
DATE SIGNED (Mo., Day, Yr.) 22b.
HOUR OF DEATH 22c. M
PRONOUNCED DEAD (Mo., Day, Yr.) 22d. ON
PRONOUNCED DEAD (Hour) 22e. AT M

NAME AND ADDRESS OF CERTIFIER (PHYSICIAN, MEDICAL EXAMINER OR CORONER) (Type or Print) 23

REGISTRAR 24a. (Signature) ▶
DATE RECEIVED BY REGISTRAR (Mo., Day, Yr.) 24b.

**CAUSE OF DEATH**

CONDITIONS IF ANY WHICH GAVE RISE TO IMMEDIATE CAUSE STATING THE UNDERLYING CAUSE LAST

25. IMMEDIATE CAUSE (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c).)

PART I (a) Interval between onset and death
DUE TO, OR AS A CONSEQUENCE OF
(b) Interval between onset and death
DUE TO, OR AS A CONSEQUENCE OF
(c) Interval between onset and death

PART II OTHER SIGNIFICANT CONDITIONS—Conditions contributing to death but not related to cause given in PART I (a)
AUTOPSY (Specify Yes or No) 26.
WAS CASE REFERRED TO MEDICAL EXAMINER OR CORONER (Specify Yes or No) 27.
ACC., SUICIDE, HOM., UNDET., OR PENDING INVEST. (Specify) 28a.
DATE OF INJURY (Mo., Day, Yr.) 28b.
HOUR OF INJURY 28c. M
DESCRIBE HOW INJURY OCCURRED 28d.
INJURY AT WORK (Specify Yes or No) 28e.
PLACE OF INJURY—At home, farm, street, factory, office building, etc. (Specify) 28f.
LOCATION STREET OR R.F.D. No. CITY OR TOWN STATE 28g.

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# SECTION II

## RULES FOR SELECTION OF CAUSE OF DEATH FOR MORTALITY TABULATION

The following are the international rules for selecting the underlying cause of death for mortality tabulation. Some examples have been omitted and additional examples and explanations presented.

When only one cause of death is recorded, this cause is selected for tabulation. When more than one cause of death is recorded, selection should be made in accordance with the rules which follow. The rules are based on the concept of the underlying cause, i.e., the disease or injury which initiated the sequence of events which led to death. Where the selected cause is an injury, either the circumstances which gave rise to the injury, or the nature of the injury, or preferably both should be coded.

Selection of the cause to be coded comprises two stages; selection of the underlying cause, and subsequent modification of the underlying cause. These two stages are described below.

### Selection of the Underlying Cause

The rules for selecting the underlying cause are as follows. Either the General rule or Rule 1 or Rule 2 will apply to all certificates. Rule 3 may apply in addition to one of these.

*General rule*. Select the condition entered alone on the lowest used line of Part I unless it is highly improbable that this condition could have given rise to all the conditions entered above it.

*Rule 1*. If there is a reported sequence terminating in the condition first entered on the certificate, select the underlying cause of this sequence. If there is more than one such sequence, selected the underlying cause of the first mentioned sequence.

*Rule 2*. If there is no reported sequence terminating in the condition first entered on the certificate, select this first mentioned condition.

*Rule 3*. If the condition selected by the General rule or Rules 1 or 2 can be considered a direct sequel of another reported condition, whether in Part I or Part II, select this primary condition. If there are two or more such primary conditions, select the first mentioned of these.

In a properly completed certificate, the underlying cause will have been entered alone on the lowest used line of Part I and the conditions, if any, which arose as a consequence of this underlying cause will have been entered above it, one condition to a line, in ascending causal order of sequence.

Examples: I(a) Uremia
(b) Retention of urine
(c) Hypertrophy of prostate

I(a) Bronchopneumonia
(b) Chronic bronchitis
(c)
II Chronic myocarditis

In a properly completed certificate, therefore, the General rule will apply. However, the fact that the certificate as a whole has not been completed in an entirely satisfactory manner does not preclude the application of the General rule. Provided that it is not highly improbable that the condition entered alone on the lowest used line of Part I could have given rise to all the conditions above it, the General rule should be applied, even though the conditions entered above it have not been entered in a correct causal order of sequence.

Examples: I(a) Gangrene of intestine and
(b) peritonitis
(c) Volvulus of cecum

I(a) Coronary thrombosis
(b) Cerebral hemorrhage
(c) Arteriosclerosis

The General rule should be discarded only when the certifier has entered more than one condition on the lowest used line of Part I or has entered there a single condition and it is highly improbable that this condition could have given rise to all the conditions entered above it. Guidance on the interpretation of "highly improbable" is given at the end of the rules, but it should be borne in mind that the medical certifier's statement indicates his opinion about the conditions leading to death and about their relationship one to another, and this opinion should not be lightly disregarded.

Where the General rule cannot be applied, clarification of the certificate should be sought from the certifier whenever this is possible, since the remaining selection rules are somewhat arbitrary and may not always lead to a satisfactory selection of the underlying cause. Where further clarification cannot be obtained, however, Rule 1 or 2 must be applied.

In these rules, the term "reported sequence" means two or more conditions entered on successive lines of Part I, each condition being an acceptable cause of the one entered on the line above it. Rule 1 is applicable only if such a reported sequence, terminating in the condition first entered on the certificate, is found. If such a sequence is not found, Rule 2 applies and the first entered condition is selected.

The condition selected by the above rules may, however, be an obvious sequel of another condition which was not reported in a correct causal relationship with it, e.g., in Part II or on the same line in Part I. If so, then Rule 3 also applies and the primary condition is selected. It applies, however, only when there is no doubt about the causal relationship between the two conditions; it is not sufficient that a causal relationship between them would have been accepted if the certifier had reported it.

## Modification of the Underlying Cause

The underlying cause, as selected by the above rules, will not necessarily be the most useful and informative condition for tabulations of mortality data. For example, if senility or some generalized disease such as hypertension or arteriosclerosis has been selected, more useful information will be conveyed if the condition to be tabulated is some reported manifestation of the aging or disease process. In other cases, it may be necessary to modify the assignment to conform with the provisions of the International Classification of Diseases for a single code for two or more causes jointly reported or for preference for a particular cause when reported with certain other conditions.

The modification rules (Rules 4-12), therefore, are intended to improve the usefulness and precision of mortality tabulations and should be applied after selection of the underlying cause by means of the selection rules. The processes of selection and modification have been separated for the sake of clarity, though they are closely interwoven; it will be seen, for example, that some of the modification rules require a renewed application of the selection rules. This should present no difficulty to experienced coders but for beginning coders the importance of going through the mental processes of selection, modification and, if necessary, reselection, should be emphasized.

The titles of the nine modification rules are as follows:

| | |
|---|---|
| Rule 4 | Senility |
| Rule 5 | Ill-defined conditions |
| Rule 6 | Trivial conditions |
| Rule 7 | Linkage |
| Rule 8 | Specificity |
| Rule 9 | Early and late stages of disease |
| Rule 10 | Late effects |
| Rule 11 | Old pneumonia, influenza, and maternal conditions |
| Rule 12 | Errors and accidents in medical care |

The thirteen rules for determining the underlying cause with interpretations and examples are discussed on the following pages.

## Selection Rules and Interpretations

### *General Rule*

*Select the condition entered alone on the lowest used line of Part I unless it is highly improbable that this condition could have given rise to all the conditions entered above it.*

### Interpretations and Examples

The General rule is the rule under which the certifier's report is accepted. If one condition is entered on the lowest used line, all the conditions entered above it must be entered either in "a reported sequence" of one condition to a line, or it must be probable that the condition on the lowest used line could have given rise to all the conditions entered above it.

| | | | Codes for Record |
|---|---|---|---|
| I(a) | Cerebral hemorrhage | 1 mo | 431 |
| (b) | Nephritis | 6 mos | 583.9 |
| (c) | Cirrhosis of liver | 2 yrs | 571.5 |

Select cirrhosis of liver. This is a reported sequence. Each condition on the successive lines in Part I is an acceptable cause of the one entered on the line above it.

In the examples below, it is probable that the condition on the lowest used line in Part I could have given rise to all the conditions entered above it.

| | | | Codes for Record |
|---|---|---|---|
| I(a) | Apoplexy with terminal hypostatic | | 436 514 |
| (b) | pneumonia | 8 days | |
| (c) | Hypertension | 3 yrs | 401.9 |
| II | Myocarditis | 2 yrs | 429.0 |

Select hypertension. Hypertension may give rise to both conditions reported on I(a).

| | | | Codes for Record |
|---|---|---|---|
| I(a) | Fatty degeneration of liver | 1 yr | 571.8 |
| (b) | Cerebral hemorrhage | 2 days | 431 |
| (c) | Chronic alcoholism | | 303 |
| II | Large bowel obstruction | | 560.9 |

Select chronic alcoholism. It is not necessary for the conditions on (a) and (b) to be causally related when the condition entered alone on (c) can give rise to both conditions.

## *Rule 1*

*If there is a reported sequence terminating in the condition first entered on the certificate, select the underlying cause of this sequence. If there is more than one such sequence, select the underlying cause of the first mentioned sequence.*

### Interpretations and Examples

| | | Codes for Record |
|---|---|---|
| I(a) | Pulmonary embolism | 415.1 |
| (b) | Arteriosclerotic heart disease | 414.0 |
| (c) | Influenza | 487.1 |

Select arteriosclerotic heart disease (ASHD). The General rule is not applicable because influenza cannot cause ASHD. The reported sequence terminating in the condition first entered on the certificate is pulmonary embolism due to arteriosclerotic heart disease.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Bronchopneumonia | 485 | |
| (b) | Cerebral thrombosis and | 434.0 | 402.9 |
| (c) | hypertensive heart disease | | |

Select cerebral thrombosis. The General rule is not applicable since there are two conditions on the lowest used line in Part I. There are two reported sequences terminating in the condition first entered on the certificate; bronchopneumonia due to cerebral thrombosis, and bronchopneumonia due to hypertensive heart disease. The underlying cause of the first mentioned reported sequence is selected.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Cerebral hemorrhage & hypostatic pneumonia | 431 | 514 |
| (b) | Mitral stenosis, diabetes | 394.0 | 250.0 |
| (c) | | | |

Select diabetes. The General rule is not applicable since there are two conditions on the lowest used line. Cerebral hemorrhage is not due to mitral stenosis, therefore, diabetes is selected by Rule 1.

## *Rule 2*

*If there is no reported sequence terminating in the condition first entered on the certificate, select this first mentioned condition.*

### Interpretations and Examples

| | | Codes for Record |
|---|---|---|
| I(a) | Pernicious anemia and gangrene of | 281.0 785.4 |
| (b) | foot | |
| (c) | Arteriosclerosis | 440.9 |

Select pernicious anemia. Neither the General rule nor Rule 1 is applicable. Pernicious anemia due to arteriosclerosis is not an acceptable sequence. There is a reported sequence, gangrene of foot due to arteriosclerosis, but it does not terminate in the condition first entered on the certificate.

| | | Codes for Record |
|---|---|---|
| I(a) | Rheumatic and arteriosclerotic heart | 398.9 414.0 |
| (b) | disease | |
| (c) | | |

Select rheumatic heart disease. There is no reported sequence.

| | | Codes for Record |
|---|---|---|
| I(a) | Coronary occlusion | 410 |
| (b) | Cerebral hemorrhage | 431 |
| (c) | HCVD, chronic bronchitis | 402.9 491.9 |

Select coronary occlusion. Neither the General rule nor Rule 1 is applicable. Since cerebral hemorrhage is an unacceptable cause of coronary occlusion, or any other ischemic heart disease, there is no reported sequence terminating in the condition first entered on the certificate.

## *Rule 3*

*If the condition selected by the General rule or Rules 1 or 2 can be considered a direct sequel of another reported condition, whether in Part I or Part II, select this primary condition. If there are two or more such primary conditions, select the first mentioned of these.*

*Certain conditions that are common post-operative complications (pneumonia (any type), haemorrhage, thrombophlebitis, embolism, thrombosis, infarction) can be considered as direct sequels to an operation unless it is stated to have occurred 4 or more weeks before death.*

### Interpretations and Examples

Rule 3 is applicable when the condition selected by the General rule, Rule 1, or Rule 2 is obviously the result of another condition reported on the same line, on a lower line in Part I, or in Part II. It applies only when there is no doubt about the causal relationship between the two conditions; it is not sufficient that a causal relationship between them would have been accepted if the certifier had reported it. If the selected cause is considered a direct sequel of two or more conditions on the record, the priority order for reselection is from left to right, (1) on the same line, (2) on a lower line in Part I, and (3) in Part II. Conditions reported on lines above the selected cause are not considered in the application of Rule 3.

For assistance in determining whether a selected condition is a direct sequel of another, refer to Part 2c, Decision Tables. The symbol "DS" identifies Direct sequel, and the symbol "DSC" identifies Direct sequel combination.

| | | Codes for Record |
|---|---|---|
| I(a) | Bronchopneumonia | 485 |
| (b) | Congestive heart failure and | 428.0 394.0 |
| (c) | mitral stenosis | |

Select mitral stenosis. Congestive heart failure, selected by Rule 1, is considered a direct sequel of mitral stenosis.

| | | Codes for Record |
|---|---|---|
| I(a) | Cardiac arrest | 427.5 |
| (b) | Hemorrhage | 459.0 |
| (c) | | |
| II | Peptic ulcer | 533.9 |

Select peptic ulcer, chronic or unspecified with hemorrhage (533.4). The hemorrhage is considered a direct sequel (DSC) of the peptic ulcer and combines to become peptic ulcer with hemorrhage.

## Complications of Operations and Trauma

For the purpose of applying Selection Rule 3, pneumonia (any), selected as the underlying cause will be considered a direct sequel of trauma reported on the certificate. This provision does not apply if trauma is stated to have occurred 4 weeks or more before death.

| | Codes for Record |
|---|---|
| I(a) Bronchopneumonia | 958.8 |
| (b) | |
| (c) | |
| II Fracture of right hip from accidental fall on steps, at home | 820.8 E880.9 |

Code to accidental fall on stairs (E880.9), the circumstances which caused the injury.

Certain conditions that are common post-operative complications can be considered as direct sequels to an operation unless the surgery is stated to have occurred 4 weeks or more before death. Some of the more common complications are:

Pneumonia (any type), hemorrhage, embolism, infarction, thrombosis, occlusion, thrombophlebitis, cardiac arrest, renal failure (acute), septicemia, aspiration and atelectasis.

| | Codes for Record |
|---|---|
| I(a) Mesenteric thrombosis | 997.4 |
| (b) | |
| (c) | |
| II Colectomy for cancer of sigmoid | E878.6 153.3 |

Code to cancer of sigmoid (153.3).

| | Codes for Record |
|---|---|
| I(a) Coronary thrombosis | 410 |
| (b) | |
| (c) | |
| II Removal of gallbladder (gallstones) 2 months ago | 574.2 |

Code to coronary thrombosis (410). The operation is stated to have occurred more than 4 weeks before death.

## Modification Rules and Interpretations

### *Rule 4 - Senility*

*Where the selected underlying cause is classifiable to 797 (Senility) and a condition classifiable elsewhere than to 780-799 is reported on the certificate, reselect the underlying cause as if the senility had not been reported, except to take account of the senility if it modifies the coding.*

#### Interpretations and Examples

When senility is selected as the underlying cause, it is ignored as if it had not been reported and a second underlying cause not classifiable to 797, 780-799 is selected. After reselecting, determination is made as to whether the reselected underlying cause is modified by the senility.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Cardiac arrest | 427.5 | |
| (b) | Pneumonia | 486 | |
| (c) | Senility and psychosis | 797 | 298.9 |

Code to psychosis associated with senility (290.2). Senility, selected by Rule 1, is ignored and psychosis is reselected by the General rule. Psychosis due to or associated with senility is classified to 290.2.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Senility and hypostatic pneumonia | 797 | 514 |
| (b) | Rheumatoid arthritis | 714.0 | |

Code to rheumatoid arthritis (714.0). Senility, selected by Rule 2, is ignored and rheumatoid arthritis is selected as the underlying cause by the General rule.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Pneumonia | 486 | |
| (b) | Heart disease | 429.9 | |
| (c) | Senility and emphysema | 797 | 492 |

Code to emphysema (492). Senility, selected by Rule 1, is ignored and emphysema is reselected by the General rule.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Psychosis | 298.9 | |
| (b) | Senility and cancer of brain | 797 | 191.9 |

Code to cancer of brain (191.9). Senility, selected by Rule 1, is ignored and cancer of brain is reselected by the General rule.

## *Rule 5 - Ill-defined conditions*

*Where the selected underlying cause is classified to 780-796, 798-799 (the ill-defined conditions) and a condition classifiable elsewhere than to 780-799 is reported on the certificate, reselect the underlying cause as if the ill-defined condition had not been reported, except to take account of the ill-defined condition if it modifies the coding.*

### Interpretations and Examples

When an ill-defined condition is selected as the underlying cause, it is ignored as if it had not been reported and a second underlying cause not classifiable to 780-796 is selected. After reselecting, determination is made as to whether the reselected underlying cause is modified by the ill-defined cause.

| | | Codes for Record |
|---|---|---|
| I(a) | Bacteremia and hematemesis | 790.7 578.0 |

Code to hematemesis (578.0). Bacteremia (790.7), selected by Rule 2, is ignored.

| | | Codes for Record |
|---|---|---|
| I(a) | Terminal pneumonia | 486 |
| (b) | Spreading gangrene and cerebrovascular | 785.4 436 |
| (c) | accident | |

Code to cerebrovascular accident (436). Gangrene (785.4), selected by Rule 1, is ignored and the General rule applied.

| | | Codes for Record |
|---|---|---|
| I(a) | Electrolyte imbalance | 276.9 |
| (b) | Vomiting and dehydration | 787.0 276.5 |

Code to dehydration (276.5). Vomiting (787.0), selected by Rule 1, is ignored and the General rule applied.

| | | Codes for Record |
|---|---|---|
| I(a) | Anemia | 285.9 |
| (b) | Splenomegaly | 789.2 |

Code to splenomegalic anemia (285.8). Splenomegaly, selected by the General rule, is ignored by Rule 5. Anemia, reselected by the General rule, is modified by the ill-defined cause.

## *Rule 6 - Trivial condition*

*Where the selected underlying cause is a trivial condition unlikely itself to cause death, proceed as follows:*

*(a) if the death was the result of an adverse reaction to treatment of the trivial condition, select the adverse reaction.*

### Interpretations and Examples

| | | Codes for Record |
|---|---|---|
| I(a) | Cardiac arrest | 427.5 |
| (b) | Administration of nitrous oxide | E938.2 |
| (c) | dental extraction | 525.9 |

Code to cardiac arrest (427.5), the adverse reaction. The trivial condition, diseased teeth (525.9), is not coded when an adverse reaction occurs as the result of treatment. The correct dosage of a drug is assumed unless otherwise indicated. The E Code for the anesthetic cannot be used as the underlying cause in such cases since the adverse reaction is not classifiable to a category in Chapter XVII of ICD-9.

| | | Codes for Record |
|---|---|---|
| I(a) | Post-operative hemorrhage | 998.1 E878.6 |
| (b) | Tonsillectomy | |
| (c) | Hypertrophy of tonsils | 474.1 |

Code to removal of organ as cause of complication (E878.6). The trivial condition, Hypertrophy of tonsils (474.1) is not coded when an adverse reaction occurs as the result of treatment. Since the complication, post-operative hemorrhage (998.1), is classified to a category in Chapter XVII, the E Code is used for the underlying cause.

| | | Codes for Record |
|---|---|---|
| I(a) | Acute renal failure | 584.9 |
| (b) | Aspirin taken for | E935.1 |
| (c) | recurrent migraines | 346.9 |

Code to acute renal failure (584.9), the adverse reaction to the drug taken for treatment of a trivial condition. The E Code for the drug is not used as the underlying cause since the adverse reaction is not classifiable to a category in Chapter XVII.

(b) *if the trivial condition is not reported as the cause of a more serious complication, and a more serious unrelated condition is reported on the certificate, reselect the underlying cause as if the trivial condition had not been reported.*

Interpretations and Examples

| | | Codes for Record |
|---|---|---|
| I(a)<br>(b) | Congenital anomaly of eye and congenital heart disease | 743.9 746.9 |

Code to congenital heart disease (746.9). Congenital anomaly of eye (743.9), selected by Rule 2, is discarded by Rule 6(b) since it is not reported as the cause of a more serious condition.

When a trivial condition is selected and neither part (a) nor part (b) of Rule 6 is applicable, the trivial condition is not discarded. The following example illustrates a situation where a trivial condition is selected and Rule 6 is not applicable.

| | | Codes for Record |
|---|---|---|
| I(a) | Septicemia | 038.9 |
| (b) | Impetigo | 684 |

Code to impetigo (684). The trivial condition (684), selected by the General rule, is not discarded since it is reported as the cause of a more serious condition.

NOTE: See Part 2c, Decision Tables for conditions considered to be trivial.

## Rule 7 - Linkage

*Where the selected underlying cause is linked by a provision in the classification in the Notes for use in primary mortality coding on pages 713-721 with one or more of the other conditions on the certificate, code the combination.*

*Where the linkage provision is only for the combination of one condition specified as due to another, code the combination only when the correct causal relationship is stated or can be inferred from application of the selection rules.*

*Where a conflict in linkages occurs, link with the condition that would have been selected if the underlying cause initially selected had not been reported. Apply any further linkage that is applicable.*

### Interpretations and Examples

Linkage is the assignment of a preference or combination code for two or more jointly reported causes of death in accordance with a provision in ICD. The provision may be for linking one condition with mention of the other, or for linking one condition when reported as "due to" the other.

Guideline notes and instructions for applying the mandatory international linkages are listed in category order in ICD-9, Volume 1, pages 713-721. They have been repeated in this manual along with other preferences and instructions pertinent to coding practices in the United States. Also, the codes for specific linkages are contained in Part 2c, Decision Tables. These decision tables present the linkages as described below for use in classifying the underlying cause of death.

Application of the linkage rule, as with the use of all other international rules for determining the underlying cause of death, must be carried out in a sequential step-by-step process to comply with the intention of ICD and to achieve standardization of data. This is particularly essential in the linkage rule. It is the most complex step in determining the underlying cause of death and is used more than any other modification rule.

The following symbols identify the linkages in the decision tables:

LMP (Linkage with mention of - Preference) is used when another condition is preferred over the selected underlying cause regardless of the placement of either of the two conditions on the record.

LMC (Linkage with mention of - Combination) is used when the selected underlying cause and another condition link to become a combination code regardless of the placement of either of the two conditions on the record.

LDP (Linkage "due to" - Preference) is used when another condition stated as "due to" the selected underlying cause is preferred.

LDC (Linkage "due to" - Combination) is used when the selected underlying cause is merged with another condition stated as "due to" the selected underlying cause into a combination code.

## Placement of Condition for "Due To" Linkages

Placement of the conditions on the record is of paramount importance in determining when "due to" linkages (LDP, LDC) may be made. For this purpose, the following criteria are to be applied. If the General rule is applied, every condition on every line above it is considered to have a "due to" relationship with the selected underlying cause. If Rule 1 is applied, only the conditions on the next higher line are in "due to" relationship with the selected underlying cause.

### Situation 1. One linkage on the record

This is the most straightforward kind of linkage wherein the selected underlying cause links with only one other condition on the record through any one of the four types of linkages.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Coronary embolism | 410 | |
| (b) | Old myocardial degeneration | 429.1 | |
| (c) | Arteriosclerotic heart disease | 414.0 | |
| II | Hypertension, arteriosclerosis | 401.9 | 440.9 |

Code to acute myocardial infarction (410).

Arteriosclerotic heart disease (414.0), selected by the General rule, links (LMP) with coronary embolism (410).

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Pneumonia and emphysema | 486 | 492 |
| (b) | | | |
| (c) | Bronchitis | 490 | |
| II | Cerebral arteriosclerosis | 437.0 | |

Code to obstructive chronic bronchitis (491.2).

Bronchitis, selected by the General rule, links (LMC) with emphysema into a combination code of 491.2.

| | | Codes for Record |
|---|---|---|
| I(a) | Thrombotic mesenteric infarction | 557.0 |
| (b) | Heart failure | 428.9 |
| (c) | Arteriosclerosis | 440.9 |

Code to acute vascular insufficiency of intestine (557.0).

Arteriosclerosis, selected by the General rule, links (LDP) in "due to" position with mesenteric infarction (557.0).

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Bronchopneumonia | 485 | |
| (b) | Nephropathy | 583.9 | |
| (c) | Hypertension and arteriosclerosis | 401.9 | 440.9 |

Code to hypertensive renal disease (403.9).

Hypertension, selected by Rule 1, links (LDC) in "due to" position with "nephropathy" into a combination code of 403.9.

## Situation 2. Two or more concurrent linkages (conflict in linkages)

When the selected underlying cause links with more than one condition on the record, a conflict in linkage exists. When there is a conflict, linkage is with the condition that would have been selected if the selected cause had not been reported. Therefore, prefer a linkage in Part I over one in Part II. If the conflict is in Part I, reapply the selection rules as though the selected cause had not been reported. If the reselected cause is one of the linkage conditions, make this linkage. If the reselected cause is not one of the linkage conditions, again apply the selection rules as though the initially selected and reselected causes had not been reported. Continue this process until a reselected cause is one of the conditions to which the initially selected underlying cause links. Then link the initially selected underlying cause to that condition.

I(a) Pneumonia
(b) Congestive heart failure, renal disease
(c) Hypertension and arteriosclerosis
II

| | Codes for Record | | Linkage Record | |
|---|---|---|---|---|
| I(a) | 486 | | 486 | |
| (b) | 428.0 | 593.9 | 428.0 | 593.9 |
| (c) | 401.9 | 440.9 | | 440.9 |

Code to hypertensive heart disease (402.9).

Hypertension, selected by Rule 1, links (LDC) in "due to" position with congestive heart failure and also links (LDC) in "due to" position with the term "renal disease."

Construct the linkage record with all conditions except the selected underlying cause of death and apply the selection rules to this record.

Reselect arteriosclerosis. Since this is not one of the linkage conditions, the selection rules are reapplied. Select congestive heart failure (428.0). Congestive heart failure is identified as the condition to be linked with the initially selected underlying cause into the combination code of 402.9.

I(a) Cardiac arrest and pneumonia
(b) Cerebrovascular accident, ischemic heart disease
(c) Arteriosclerosis
II Hypertension and contracted kidney

| | Codes for Record | Linkage Record |
|---|---|---|
| I(a) | 427.5 486 | 427.5 486 |
| (b) | 436 414.9 | 436 414.9 |
| (c) | 440.9 | |
| II | 401.9 587 | 401.9 587 |

Code to cerebrovascular accident (436).

Arteriosclerosis, selected by the General rule, links (LMP) with cerebrovascular accident; (LMP) with ischemic heart disease; and (LMP) with hypertension.

The linkage record is constructed, consisting of all conditions except the selected underlying cause and the selection rules are reapplied to the linkage record. Cerebrovascular accident would have been selected by Rule 1 and is thus identified as the condition to be linked with initially selected cause.

I(a) CVA
(b) Parkinson's disease
(c) Arteriosclerosis

| | Codes for Record | Linkage Record |
|---|---|---|
| I(a) | 436 | 436 |
| (b) | 332.0 | 332.0 |
| (c) | 440.9 | |

Code to Parkinson's disease (332.0).

Arteriosclerosis, selected by the General rule, links (LDP) in "due to" position with Parkinson's disease and also links (LMP) with mention of CVA.

The linkage record is constructed and the selection rules applied. Parkinson's disease would have been selected by the General rule and is, therefore, the condition that is preferred.

## Situation 3. Further linkage

After initial linkage is made, the preferred condition or combination category may further link with another condition on the record to create a sequence of linkages.

| | | Codes for Record | |
|---|---|---|---|
| I(a) | Pneumonia, hypertension | 486 | 401.9 |
| (b) | Arteriosclerosis & renal sclerosis | 440.9 | 587 |
| (c) | Cancer of lung | 162.9 | |

**Code to** hypertensive renal disease (403.9).

Arteriosclerosis, selected by Rule 1, links (LMP) with hypertension. Hypertension further links (LMC) with renal sclerosis into a combination code (403.9).

| | | Codes for Record |
|---|---|---|
| I(a) | Ventricular aneurysm | 414.1 |
| (b) | Malignant hypertensive heart disease | 402.0 |
| (c) | Chronic renal failure | 585 |

**Code to** aneurysm of heart (414.1).

Chronic renal failure, selected by the General rule, links (LMC) with malignant hypertensive heart disease into a combination of 404.0, hypertensive heart and renal disease, specified as malignant. This combination (404.0) further links (LMP) with ventricular aneurysm (414.1).

I(a) Heart and renal failure
(b) Chronic renal disease
(c) Arteriosclerosis and hypertension

| | Codes for Record | | Linkage Record | |
|---|---|---|---|---|
| I(a) | 428.9 | 586 | 428.9 | 586 |
| (b) | 582.9 | | 582.9 | |
| (c) | 440.9 | 401.9 | | 401.9 |

**Code to** hypertensive heart and renal disease (404.9).

Arteriosclerosis, selected by Rule 1, links (LMP) with hypertension, and (LDC) in "due to" position with the term "chronic renal disease." This is a conflict in linkage, therefore, construct the linkage record consisting of all conditions except the selected underlying cause and apply the selection rules to this linkage record.

Since hypertension would have been selected by the General rule, it is thus identified as the condition to be linked. Make this linkage (---440.9---LMP 401.9). Conditions classifiable to 401.9 further link (LDC) in "due to" position with "chronic renal disease" and (LDC) in "due to" position with heart failure, and (LMC) with renal failure. This conflict in linkage requires that a second linkage record be constructed.

Linkage Record
I(a) 428.9 586
(b) 582.9
(c)

Apply the selection rules to the new linkage record. "Chronic renal disease" would have been selected by the General rule and is identified as the term to be linked with hypertension into the combination code of 403.9. This further links (LDC) with heart failure into the combination code of 404.9.

## *Rule 8 - Specificity*

*Where the selected underlying cause describes a condition in general terms and a term which provides more precise information about the site or nature of this condition is reported on the certificate, prefer the more informative term. This rule will often apply when the general term can be regarded as an adjective qualifying the more precise term.*

### Interpretations and Examples

When the selected underlying cause is a general term usually classifiable to an "Unspecified" or "Ill-defined" category and a more specified condition classifiable to the same section or to a disease of the same organ or body system, prefer the more specified condition. These preference codes are identified in Part 2c, Decision Tables, preceded by the symbols "SMP," specificity with mention of - preference and "SMC," specificity with mention of - combination.

| | | Codes for Record |
|---|---|---|
| I(a) | Cerebral thrombosis | 434.0 |
| (b) | Cerebrovascular accident | 436 |

Code to cerebral thrombosis (434.0). Cerebrovascular accident, selected by the General rule, is considered a general term and cerebral thrombosis is preferred as the more informative term.

When the selected general term in the correct causal relationship can be regarded as an adjective qualifying a term reported on a line above it, this modification often results in a combination code. These combination codes are identified in Part 2c, Decision Tables, preceded by the symbol "SDC," specificity "due to" - combination.

| | | Codes for Record |
|---|---|---|
| I(a) | Meningitis | 322.9 |
| (b) | Tuberculosis | 011.9 |

Code to tuberculous meningitis (013.0). The tuberculosis is reported in the correct causal relationship to be used as an adjective.

Conflict in Specificity. When there are two or more conditions on the certificate to which the specificity rule applies, reapply the selection rules as though the general term had not been reported. If the reselected condition is not one of the more specified conditions to which Rule 8 applies, again apply the selection rules as though the general term and the reselected condition had not been reported. Continue this reselection process until the reselected condition is one of the more specified terms that would take preference over the general term. After the more specified condition has been identified, any applicable linkage (Rule 7) may be made.

| | | Codes for Record |
|---|---|---|
| I(a) | Pulmonary fibrosis | 515 |
| (b) | Chronic lung disease and emphysema | 518.8 492 |

Code to emphysema (492). Chronic lung disease is selected by Rule 1. Both emphysema and pulmonary fibrosis are more specified lung diseases. Emphysema would have been selected if chronic lung disease had not been mentioned and is, therefore, identified as the condition that would take preference.

| | | Codes for Record |
|---|---|---|
| I(a) | Pyelonephritis | 590.8 |
| (b) | Kidney stones | 592.0 |
| (c) | Renal disease | 593.9 |

Code to calculus of kidney (592.0). Renal disease (593.9) is selected by the General rule. Both pyelonephritis and kidney stones are specified renal diseases. Kidney stones (592.0) would have been selected if renal disease had not been reported and is therefore the preferred condition.

## *Rule 9 - Early and late stages of disease*

*Where the selected underlying cause is an early stage of a disease and a more advanced stage of the same disease is reported on the certificate, code to the more advanced stage. This rule does not apply to a "chronic" form reported as due to an "acute" form unless the Classification gives special instructions to that effect.*

### Interpretations and Examples

| | | Codes for Record |
|---|---|---|
| I(a) | Tertiary syphilis | 097.0 |
| (b) | Primary syphilis | 091.2 |

Code to tertiary syphilis (097.0).

| | | Codes for Record |
|---|---|---|
| I(a) | Eclampsia during pregnancy | 642.6 |
| (b) | Pre-eclamptic toxemia | 642.4 |

Code to eclampsia of pregnancy (642.6).

| | | Codes for Record |
|---|---|---|
| I(a) | Chronic myocarditis | 429.0 |
| (b) | Acute myocarditis | 422.9 |

Code to acute myocarditis (422.9). Acute myocarditis is selected by the General rule. No "special instruction" is given to prefer chronic myocarditis over acute myocarditis.

| | | Codes for Record |
|---|---|---|
| I(a) | Chronic nephritis | 582.9 |
| (b) | Acute nephritis | 580.9 |

Code to chronic nephritis (582.9). Chronic nephritis is preferred when it is reported as secondary to acute nephritis. The General rule and Linkage are applicable.

## *Rule 10 - Late effects*

*Where the selected underlying cause is an early form of a condition for which the Classification provides a separate late effects category and there is evidence that death occurred from residual effects of this condition rather than in its active phase, code to the appropriate late effects category.*

*The following late effects categories have been provided:*

| | |
|---|---|
| *137* | *Late effects of tuberculosis* |
| *138* | *Late effects of acute poliomyelitis* |
| *139* | *Late effects of other infectious and parasitic diseases* |
| *268.1* | *Late effects of rickets* |
| *326* | *Late effects of intracranial abscess or pyogenic infection* |
| *438* | *Late effects of cerebrovascular disease* |

*In addition, E929, E959, E969, E977, E989, and E999 are provided for late effects of the external causes.*

### Interpretations and Examples

These "late effect" categories are to be used for underlying cause mortality coding to indicate that death resulted from late (residual) effects of a given disease or injury rather than during the active phase. Rule 10 applies in such circumstances. Guidance in interpreting late effects categories is given in Section IV of this manual, listed in tabular order.

| | | Codes for Record |
|---|---|---|
| I(a) | Old pulmonary tuberculosis | 137.0 |

Code to late effects of respiratory tuberculosis (137.0).

| | | Codes for Record |
|---|---|---|
| I(a) | Heart failure | 428.9 |
| (b) | Curvature of spine | 737.9 |
| (c) | Rickets in childhood | 268.1 |

Code to late effects of rickets (268.1).

| | | Codes for Record |
|---|---|---|
| I(a) | Hydrocephalus | 331.4 |
| (b) | Cerebral abscess | 326 |

Code to late effects of intracranial abscess (326). Hydrocephalus is considered a residual effect of intracranial abscess.

| | | | Codes for Record |
|---|---|---|---|
| I(a) | Hypostatic pneumonia | | 514 |
| (b) | Hemiplegia | | 342.9 |
| (c) | Cerebrovascular accident | 10 years | 438 |

Code to late effects of cerebrovascular disease (438).

| | | Codes for Record |
|---|---|---|
| I(a) | Chronic nephritis | 582.9 |
| (b) | Scarlet fever | 139.8 |

Code to late effects of other infectious and parasitic diseases (139.8). The description of the nephritis as "chronic" implies that the scarlet fever is no longer in its active phase.

| | | Codes for Record |
|---|---|---|
| I(a) | Fractured spine | 805.8 |
| (b) | Automobile accident, 18 months ago | E929.0 |

Code to late effects of automobile accident (E929.0), since the interval between the accident and death was more than 1 year.

## *Rule 11 - Old pneumonia, influenza, and maternal conditions*

*Where the selected underlying cause is pneumonia or influenza (480-487) and there is evidence that the date of onset was one year or more prior to death or a resultant chronic condition is reported, reselect the underlying cause as if the pneumonia or influenza had not been reported. Where the selected underlying cause is a maternal cause (630-678) and there is evidence that death occurred more than 42 days after termination of pregnancy or a resultant chronic condition is reported, reselect the underlying cause as if the maternal cause had not been reported. Take into account the pneumonia, influenza, or maternal condition if it modifies the coding.*

### Interpretations and Examples

| | | Codes for Record |
|---|---|---|
| I(a) | Cerebral hemorrhage | 431 |
| (b) | Hypertension | 401.9 |
| (c) | Childbirth 5 months ago | |

Code to cerebral hemorrhage (431). Since the childbirth occurred more than 42 days prior to death, hypertension is reselected and linked with cerebral hemorrhage.

| | | Codes for Record |
|---|---|---|
| I(a) | Pneumonia 1 year | 799.9 |

Code to other unknown and unspecified cause (799.9). The only cause reported is ignored.

| | | Codes for Record |
|---|---|---|
| I(a) | Chronic pulmonary edema | 514 |
| (b) | Lung calcification | 518.8 |
| (c) | Influenza | |

Code to other diseases of lung (518.8). Influenza is selected by the General rule, but is "old" since resultant chronic conditions are reported. Therefore, it is ignored and calcification of lung is reselected as if the influenza had not been reported.

## *Rule 12 - Errors and accidents in medical care*

*Where the selected underlying cause was subject to medical care and the reported sequence in Part I indicates explicitly that the death was the result of an error or accident occurring during medical care (conditions classifiable to categories E850-E858, E870-E876), regard the sequence of events leading to death as starting at the point at which the error or accident occurred. This does not apply to attempts at resuscitation.*

### Interpretations and Examples

The categories for this new rule (E850-E858, E870-E876) are separated from the categories for adverse effects of correct drugs properly administered in therapeutic and prophylactic dosage (E930-E949) and complications from procedures without mention of misadventures at the time of the procedure (E878-E879).

| | | Codes for Record |
|---|---|---|
| I(a) | Cardiac tamponade | 423.9 |
| (b) | Perforation of auricle by catheter | 998.2 E870.6 |
| (c) | during cardiac catheterization for congenital heart disease | 746.9 |

Code to accidental perforation during a heart catheterization (E870.6) by the General rule and Rule 12. When a nature of injury code is selected, the appropriate E Code is used for the underlying cause of death.

| | | Codes for Record |
|---|---|---|
| I(a) | Peritonitis | 567.9 |
| (b) | Perforation of bowel during barium enema | 998.2 |
| (c) | Carcinoma of colon | E870.7 |
| | | 153.9 |

Code to accidental perforation of bowel during an enema (E870.7) by the General rule and Rule 12. The "perforation of bowel" (998.2) is the starting point at which the accident occurred.

| | | Codes for Record |
|---|---|---|
| I(a) | Mesentery hemorrhage | 568.8 |
| (b) | Laceration of root of mesentery | 998.2 |
| (c) | Peritoneal dialysis for | E870.2 |
| | chronic renal disease | 582.9 |

Code to accidental laceration during kidney dialysis (E870.2). "Laceration of root of mesentery" is the starting point at which the accident occurred. When a nature of injury code is selected, the underlying cause of death will be the appropriate E Code.

| | | Codes for Record |
|---|---|---|
| I(a) | Peritonitis | 567.9 |
| (b) | Perforated jejunum | 998.2 |
| (c) | Status post laparotomy for | E870.0 |
| (d) | carcinoma of small bowel | 152.9 |

Code to accidental perforation during a surgical operation (E870.0) since the "perforated jejunum" is the starting point at which the accident occurred. When a nature of injury code is selected, the appropriate E Code will be used for the underlying cause of death.

Drug poisoning occurring during the therapeutic administration of a drug is considered an accident in medical care. The following are some of the terms interpreted to mean poisoning: wrong drug taken or given in error, overdose of drug, or toxicity of a drug Rule 12 is applicable when there is a statement or indication on the record that the drug poisoning occurred during the therapeutic administration of a drug and the condition for which the drug is being administered is stated.

| | | Codes for Record |
|---|---|---|
| I(a) | Acute renal failure | 584.9 |
| (b) | Gentamycin toxicity | 960.8 E856 |
| (c) | Malignant lymphoma | 202.8 |

Code to accidental poisoning by gentamycin (E856). Rule 12 is applicable since "toxicity" indicates an accident in medical care.

| | | Codes for Record |
|---|---|---|
| I(a) | Accidental overdose of drug | 977.9 E858.9 |
| (b) | given for retroperitoneal | 158.0 197.0 |
| (c) | liposarcoma with pulmonary metastatis | |

Code to accidental poisoning by an unspecified drug (E858.9).

## SECTION III

## EDITING AND INTERPRETING CERTAIN MEDICAL RETURNS

Selection of the underlying cause is based on selecting a single condition on the lowest used line in Part I since this condition is presumed to indicate the certifier's opinion about the sequence of events leading to the immediate cause of death. However, it is recognized that certifiers do not always report a single condition on the lowest used line nor do they always enter the related conditions in a proper order of sequence. Therefore, it is necessary to edit the conditions reported during the selection process. For this reason, standardized rules and guides are set forth in this manual.

The international coding guides are provided in this section. Also included are instructions for use in the United States designed to bring assignments resulting from reporting practices peculiar to the United States into closer alignment with the intent of the International Classification procedures.

The interpretations and instructions in this section are general in nature and are to be used whenever applicable. Those in Section IV apply to specific categories.

A. Guides for the determination of the probability of sequences

1. Assumption of intervening cause. The assumption of an intervening cause in Part I is permissible for the purpose of accepting a sequence as reported, but it must not be used to modify the coding.

Examples:

I(a) Cerebral hemorrhage
(b) Chronic nephritis

Code to chronic nephritis (582.9). It is necessary to assume hypertension as a condition intervening between cerebral hemorrhage and the underlying cause, chronic nephritis.

I(a) Mental retardation
(b) Premature separation of placenta

Code to premature separation of placenta (762.1). It is necessary to assume birth trauma, anoxia, or hypoxia as a condition intervening between mental retardation and the underlying cause, premature separation of placenta.

2. Interpretation of "highly improbable." As a guide to the acceptability of sequences in the application of the selection rules, the following relationships should be regarded as "highly improbable":

   a. an infectious or parasitic disease (001-139) other than diseases due to other mycobacteria (031), erysipelas (035), tetanus (037), septicemia or pyemia (038), gas gangrene (040.0), Vincent's angina (101), and mycoses (110-118) reported as "due to" any disease outside the group;

   b. a malignant neoplasm reported as "due to" any other disease;

   c. a congenital anomaly (740-759) reported as "due to" any other disease of the individual, including immaturity;

   d. diabetes (250) reported as "due to" any other disease except hemochromatosis (275.0), disease of pancreas (577), and pancreatic neoplasms;

   e. hemophilia (286.0-286.2) or influenza (487) reported as "due to" any other disease;

   f. rheumatic fever (390-392) or rheumatic heart disease (393-398) reported as "due to" any disease other than streptococcal sore throat (034.0), scarlet fever (034.1), streptococcal septicemia (038.0), and acute tonsillitis (463);

   g. a noninflammatory disease of the central nervous system (330-349, 430-438) reported as "due to" a disease of the digestive system (520-579) or, except for cerebral embolism (434.1), as "due to" endocarditis (394-397, 421, 424);

   h. chronic ischemic heart disease (412-414) reported as "due to" any neoplasm;

   i. any condition described as atherosclerotic (arteriosclerotic) reported as "due to" neoplasm;

   j. any hypertensive condition reported as "due to" any neoplasm except carcinoid tumors or endocrine or renal neoplasms;

   k. a condition of stated date of onset "X" reported as "due to" a condition of stated date of onset "Y," when "X" predates "Y."

   The above list does not cover all "highly improbable" sequences, but in other cases the General rule should be followed unless there are strong indications to the contrary.

The following should be accepted as possible sequences in Part I of the certificate:

Acute or terminal circulatory diseases when reported as due to malignant neoplasm, diabetes, or asthma. The following conditions are regarded as acute or terminal circulatory diseases:

| | |
|---|---|
| 410 | Acute myocardial infarction |
| 411 | Other acute and subacute forms of ischemic heart disease |
| 415 | Acute pulmonary heart disease |
| 420 | Acute pericarditis |
| 421 | Acute and subacute endocarditis |
| 422 | Acute myocarditis |
| 426 | Conduction disorders |
| 427 | Cardiac dysrhythmias |
| 428 | Heart failure |
| 429.8 | Other ill-defined descriptions of heart disease |
| 430-438 | Cerebrovascular disease except 437.0-437.5, 437.9, 438 |

## B. Effect of duration of the causes on classification

In evaluating the reported sequence of the immediate and antecedent causes, consideration should be given to any statements of the interval between the onset of the disease or condition and time of death.

Duration on a lower line in Part I shorter than that of one reported above it. If a condition in a due to position is reported as having a duration which is *shorter* than that of one above it, the condition on the lower line is not accepted as the cause.

Examples:

| | | |
|---|---|---|
| I(a) | Congestive heart failure | 2 days |
| (b) | Pneumonia | 10 days |
| (c) | Cerebral embolism | 3 days |

The duration for the condition reported on I(c) prevents the selection of cerebral embolism as the underlying cause of the condition on I(b). Pneumonia is selected by Rule 1.

| | | |
|---|---|---|
| I(a) | Congestive heart failure | 1-10-77 |
| (b) | Pneumonia | 2-8-77 |
| (c) | Cerebral embolism | 1-20-77 |

The stated date for the condition reported on I(a) predates those reported on I(b) and I(c) and, therefore, neither is accepted as the cause of the condition on I(a). Congestive heart failure is selected by Rule 2.

Two conditions with one duration. When two or more conditions are entered on the same line with one duration, the duration is ignored since there is no way to establish the condition to which the duration relates.

Examples:

I(a) Chronic myocarditis 2 yrs
(b) Chronic nephritis c̄ renal failure 2 mos

The duration for the conditions reported on I(b) is ignored and chronic nephritis is selected by Rule 1.

I(a) Myocardial ischemia c̄ myocardial infarction 2 yrs

The duration is ignored. The codes for I(a) are 414.8 and 410. Myocardial ischemia (414.8), selected by Rule 2, links with myocardial infarction (410).

Congenital malformations. Conditions classified as congenital malformations (740-759) in ICD, even when not specified as congenital on the medical certificate, should be coded as such if the interval between onset and death and the age of the decedent indicate that the condition existed from birth.

Example: Female 45 years
I(a) Heart failure
(b) Stricture of aortic valve 45 yrs

Code to congenital aortic stricture (746.3).

Congenital conditions. When a sequence is reported involving a condition specified as congenital due to another condition not so specified, both conditions may be considered as having existed from birth provided the sequence is a probable one.

Example: I(a) Peritonitis since birth
(b) Intestinal obstruction

Code to congenital obstruction of intestine (751.1)

Late effects. See Modification Rule 10.

Chronic disease or condition. The interval between onset of a condition and death is not to be used to qualify a condition as "acute" or "chronic." A condition unspecified as to whether "acute" or "chronic" will be classified as shown in the ICD volumes, regardless of duration of the condition. Rheumatic heart disease, under certain circumstances, is an exception to this generalization. (See rheumatic heart disease.) Other exceptions are gonorrhea (098.2, 098.3) and certain forms of ischemic heart disease (414.1, .8, .9).

Example: I(a) Nephritis, 2 years

Code to nephritis, unqualified (583.9).

Subacute. In general, where ICD provides for acute forms of a disease but not for subacute, the subacute forms are classified as for acute. For example, subacute pulmonary edema is coded to acute pulmonary edema (518.4).

## C. Effect of "age of decedent" on classification

*Age of the decedent* should always be noted at the time the cause of death is being coded. Certain groups of categories are provided for certain age groups. There are many conditions within certain categories which cannot be properly classified unless the *age* is taken into consideration. Generally the following definitions will apply:

NEWBORN - less than 28 days

INFANT or INFANTILE - less than 1 year

CHILD - less than 18 years

Example: Male 27 days
I(a) G.I. hemorrhage

Code to gastro-intestinal hemorrhage of newborn (772.4).

Congenital malformations. *Age* at the time of death may be used for certain conditions to consider them *congenital* in origin. Assume the following conditions are congenital provided there is no indication that they were acquired after birth:

If the *age* of the decedent is:

Less than 28 days:

endocarditis (any valve)
heart disease NOS
hydrocephalus NOS
myocarditis

## Less than 1 year

aneurysm (aorta) (aortic) (brain) (cavernous sinus) (cerebral) (circle of Willis) (coronary) (heart) (peripheral) (racemose) (retinal) (spinal (cord)) (venous)
aortic stenosis
atresia
atrophy of brain
cyst of brain
deformity
diaphragmatic hernia
displacement of organ
ectopia of organ
hiatal hernia
hypoplasia of organ
malformation
pulmonary stenosis
valvular heart disease (any valve)

Examples:

Male 2 months
I(a) Cardiac failure
(b) Aortic stenosis

Code to congenital aortic stenosis (746.3) since the age of decedent is less than 1 year.

Female 27 days
I(a) Cerebral edema
(b) Hydrocephalus

Code to congenital hydrocephalus (742.3) since the age of decedent is less than 28 days.

## D. Sex and age limitations

Where the underlying cause of death is inconsistent with the sex or appears to be inconsistent with the age, the accuracy of the underlying cause of death should be reexamined and the age and/or sex should be verified.

If the sex and cause are inconsistent, the accuracy of the sex entry on the death certificate should be determined through examination of name, occupation, and other items on the certificate. If the sex is determined to be incorrect, correct the data record. If the sex entry is correct but not consistent with the underlying cause of death, the death should be coded to "Other unknown and unspecified causes (799.9)."

If the age and cause are inconsistent, the age should be verified by subtracting the date of birth from the date of death and the coded entry should be corrected. Care should be exercised in selecting the correct underlying cause of death in terms of age restrictions in ICD.

Detailed ICD category-age-sex cross edits are contained in the *NCHS Instruction Manual, Part 11*. These edits are carried out through computer applications that provide listings for correcting data records to resolve data inconsistencies. These listings contain both absolute edits for which age-cause and/or sex-cause must be consistent and conditional edits of age-cause which are unlikely but acceptable following reverification of coding accuracy.

## E. Operations

When a sequence of conditions involving an operation is responsible for a death and there is no indication of a misadventure, the cause for which the operation was performed is coded, unless it is the result of another condition. In the latter case, the original cause is coded. However, when selecting the sequence responsible for death, no special preference is given because an operation was involved.

If a term denoting an operation is selected as the cause of death without mention of the condition for which it was performed, or of the findings of the operation, and the Index provides no assignment for it, it is to be assumed that the condition for which the operation is usually performed was present and assignment will be made in accordance with the rules for selection of the cause of death.

However, if the name of the operation leaves in doubt what specific morbid condition was present, additional information is to be sought. Failing this, code to the residual category for the organ or site indicated by the name of the operation. When neither the organ nor the site is indicated in the operative term, code to "Other unknown and unspecified causes (799.9)," unless there is mention of a complication. If the complication of surgery is classified to categories in Chapter XVII, code to the appropriate E Code for surgery. If the complication is classified to Chapters I-XVI, code the complication.

Examples:

I(a) Appendectomy

Code to 541 since this operation is usually performed for appendicitis.

I(a) Gastrectomy

Code to other and unspecified diseases of stomach and duodenum (537.9).

I(a) Sympathectomy

Code to other unknown and unspecified causes (799.9).

I(a) Postoperative adhesions

Code to surgical operation and other surgical procedures as the cause of abnormal reaction of patient or of later complication (E878.9), since postoperative adhesions (997.4) is classified to Chapter XVII.

I(a) Pulmonary insufficiency
(b) Surgery

Code to pulmonary insufficiency following trauma and surgery (518.5) since this complication is not classified to Chapter XVII.

For complications of operations for purposes of applying Rule 3, Direct sequel, see page 15.

F. Interpretation of expressions indicating doubtful diagnoses

Conditions qualified by expressions such as "apparently," "presumably," "?," "perhaps," and "possibly" which throw doubt on the statement of cause of death are to be accepted as though no such qualifications were made. The Rules for Selection will be followed in determining the underlying cause, with no special preference given to conditions which are not qualified by these expressions.

Example: I(a) Hemorrhage of stomach
(b) Probable ulcers of the stomach

Code to ulcer of stomach with hemorrhage only (531.4).

When the condition is qualified by "either ... or ..." with respect to anatomical site, assign to the residual category for the group or anatomical system in which the sites are classified.

Example: I(a) Cancer of kidney or bladder

Code to malignant neoplasm of other and unspecified urinary organs (189.9).

When the condition is qualified by "either ... or ..." with respect to sites in different anatomical systems, assign to the residual category for the disease or condition specified.

Example: I(a) Cancer of adrenal or kidney

Code to malignant neoplasm without specification of site (199.1).

When different diseases or conditions are qualified by "either ... or ...," assign to the residual category relating to the anatomical site involved.

Example: I(a) Tuberculosis or cancer of lung

Code to other diseases of lung (518.8).

When different diseases or conditions involving different anatomical systems are qualified by "either ... or ...," assign to "Other ill-defined conditions" (799.8).

Example: I(a) Gallbladder colic or coronary thrombosis

Code to other ill-defined conditions (799.8).

When diseases and injuries are qualified by "either ... or ...," assign to "Other unknown and unspecified causes" (799.9).

Example: I(a) Coronary occlusion or war injuries

Code to other unknown and unspecified cause (799.9).

For doubtful diagnosis with respect to *accidents*, *suicides*, and *homicides*, see E980-E989, page 85.

### G. Interpretation of nonmedical connecting terms used in reporting

The following terms are interpreted to mean "due to, or as a consequence of":

after
arising in or during
as a complication of
as a result of
because of
caused by
during
following
for
from
in
induced by
received in
resulting from
secondary to (2°)
subsequent to
sustained in

The following terms are interpreted to mean that the condition following the term was due to the condition that preceded it:

causing
followed by
induced
manifested by
resulting in
with resulting

The following terms are interpreted to mean "or":

and/or
versus

## H. Deletion of "due to" on the death certificate

When the certifier has indicated that conditions in Part I were not causally related by marking through items (a), (b), and/or (c), or through the printed "due to, or as a consequence of" which appears below items (a) and (b) on the death certificate, proceed as follows:

1. If the deletion(s) indicate that none of the conditions in Part I were causally related, consider as though all of the conditions had been reported on the uppermost used line.

Examples:

| | | Codes for Record |
|---|---|---|
| I~~(a)~~ | Heart disease | 429.9 401.0 582.9 |
| ~~(b)~~ | Malignant hypertension | |
| ~~(c)~~ | Chronic nephritis | |
| II | Cancer of kidney | 189.0 |

Code to heart disease, unspecified (429.9), by Selection Rule 2.

| | | Codes for Record |
|---|---|---|
| I(a) | Congestive heart failure | 428.0 414.0 |
| ~~(b)~~ | ASHD | |
| (c) | | |
| II | Pneumonia | 486 |

Code to coronary arteriosclerosis (414.0). Congestive heart failure, selected by Rule 2, links (LMP) with ASHD.

2. If only item (c) or the printed "due to, or as a consequence of" which appears below line (b) is marked through, consider the condition(s) reported on line (c) as though reported as the last entry (or entries) on the preceding line.

Example:

| | | Codes for Record |
|---|---|---|
| I(a) | Heart block | 426.9 |
| (b) | Chronic myocarditis | 429.0 431 |
| ~~(c)~~ | Cerebral hemorrhage | |
| II | Bronchopneumonia | 485 |

Code to myocarditis, unspecified (429.0) by Selection Rule 1.

3. If only item (b) or the printed "due to, or as a consequence of" which appears below line (a) is marked through, consider the condition(s) reported on line (b) as though reported as the last entry (or entries) on the preceding line.

Example:

| | | Codes for Record |
|---|---|---|
| I(a) | Cardiac arrest | 427.5 571.5 |
| ~~(b)~~ | Cirrhosis of liver | |
| (c) | Alcoholism | 303 |

Code to alcoholic cirrhosis of liver (571.2). Alcoholism, selected by the General rule, links (LMC) with cirrhosis of liver.

4. If only one part of the printed "due to, or as a consequence of" has been deleted, code the entries as if no deletion has been made.

Example:

| | | Codes for Record |
|---|---|---|
| I(a) | Cardiorespiratory failure | 799.1 |
| Due to, or as a consequence of | | |
| (b) | Infarction of brain | 434.9 |
| ~~Due to~~, or as a consequence of | | |
| (c) | Coronary arteriosclerosis | 414.0 |

Code to coronary arteriosclerosis (414.0) by applying the General rule. Disregard the *partial* marking through of the "due to, or as a consequence of" on I(b).

## I. Numbering of causes reported in Part I

Where the certifier has numbered all causes or lines in Part I, that is, 1, 2, 3, etc., the presumptive underlying cause is selected by applying Selection Rule 2. In the application of this rule, consideration is given to all causes which are numbered whether or not the numbering is extended into Part II. This provision applies whether or not the "due to" on lines (b) and/or (c) are marked through.

Example:

| | | Codes for Record |
|---|---|---|
| I(a) | 1. Coronary occlusion | 410, 250.0, 401.9, 440.9, 487.1 |
| (b) | 2. Diabetes, chronic, severe | |
| (c) | 3. Hypertension and arteriosclerosis | |
| II | 4. Influenza, 1 week | |

Code to coronary occlusion (410) by applying Selection Rule 2.

Where *part of* the causes in Part I are numbered, the interpretation is made on an individual basis.

Example:

| | | Codes for Record |
|---|---|---|
| I(a) | Bronchopneumonia | 485 |
| (b) | 1. Cancer of stomach | 151.9 250.0 |
| (c) | 2. Diabetes | |

Code to cancer of stomach (151.9) by applying Selection Rule 1. The conditions numbered 1. and 2. are considered as if they were reported on line (b).

## J. Querying cause of death

Because the selection of the underlying cause of death is based on *how* the physician reports causes of death as well as what he reports, State and local vital statistics offices should query certifying physicians where there is doubt that the manner of reporting reflects the true underlying cause of death. Querying is most valuable when carried out by persons who are thoroughly familiar with mortality medical classification.

It is possible to choose a presumptive underlying cause for any cause-of-death certification no matter how poorly reported. However, selecting the cause by arbitrary rules (Rules 1-3) is not only difficult and time consuming, but the end results often are not satisfactory. No set of arbitrary procedures can deduce what was in the physician's mind when he certified the cause of death. Querying can be used to great advantage to inform physicians of the proper method of reporting causes of death. It is hoped that intensive querying and other educational efforts will reduce the necessity of resorting to arbitrary rules, and at the same time improve the quality and completeness of the reporting.

When a certifier is queried about a particular cause or for inadequate or missing information that he may or may not have at hand, the query should be specific. It should be worded in such a manner that it requires a minimum amount of the certifier's time. When the queries are sufficiently specific to elicit specific replies, the final coding should reflect this additional information from the certifier.

The NCHS uses the supplemental information (ai.) filmed following the record or received on a separate supplemental document in assigning the underlying cause of death.

Examples:

I(a) Congestive heart failure
(b) Renal disease
ai. Renal disease was nephritis

Code to 583.9, nephritis. It is assumed that the query was to establish the specific renal disease.

I(a) Congestive heart failure
(b) Hypostatic pneumonia
ai. Underlying cause was cancer of lung

Code to 162.9, cancer of lung. It is assumed that the query was to establish the cause of the hypostatic pneumonia.

I(a) Pulmonary embolism
(b) Myocarditis
(c) Arteriosclerosis
ai. Underlying cause was cancer of g.i. tract

Code to 429.0, arteriosclerotic myocarditis. The additional information cannot be used to replace the reported underlying cause. The reply alone is not sufficient. If this case was queried either the question or the circumstances of why the ai. was included should also have been reported. If the ai. had included "the conditions on (b) and (c) should be in Part II," the reply would have been self-explanatory.

## SECTION IV

## CLASSIFICATION OF CERTAIN ICD CATEGORIES

### Infrequent or Rare Causes

Section I of ICD contains conditions which are infrequent causes of death in the United States. If one of the following diseases is reported as a cause of death, the diagnosis should have been confirmed by the certifier or the State Health Officer when it was first reported. A notation of confirmation should be recorded on the copy of the certificate sent to the NCHS. In the absence of this notation, the NCHS coder will code the disease as stated; the State Health Officer will be contacted at the time of reconciliation of rejected data records by control cycle to confirm the accuracy to the certification.

| | |
|---|---|
| 001 | Cholera |
| 002 | Typhoid and paratyphoid fevers |
| 005.1 | Botulism |
| 007 | Other protozoal intestinal diseases |
| 020 | Plague |
| 021 | Tularaemia |
| 022 | Anthrax |
| 023 | Brucellosis |
| 024 | Glanders |
| 025 | Melioidosis |
| 026 | Rat-bite fever |
| 030 | Leprosy |
| 032 | Diphtheria |
| 045 | Acute poliomyelitis |
| 050 | Smallpox |
| 051 | Cowpox and paravaccinia |
| 060 | Yellow fever |
| 061 | Dengue |
| 063 | Tick-borne viral encephalitis |
| 064 | Viral encephalitis transmitted by other and unspecified arthropods |
| 065 | Arthropod-borne hemorrhagic fever |
| 066.0 | Phlebotomus fever |
| 066.2 | Venezuelan equine fever |
| 066.3 | Other mosquito-borne fever |
| 071 | Rabies |
| 073 | Ornithosis |
| 074.1 | Epidemic pleurodynia |
| 080 | Louse-borne (epidemic) typhus |
| 081 | Other typhus |
| 082.1 | Boutonneuse fever |
| 082.2 | North Asian tick fever |
| 082.3 | Queensland tick typhus |
| 082.8 | Other tick-borne rickettsioses |
| 082.9 | Unspecified tick-borne rickettsioses |
| 083 | Other rickettsioses |
| 084 | Malaria |
| 085 | Leishmaniasis |
| 086 | Trypanosomiasis |
| 087 | Relapsing fever |
| 088 | Other arthropod-borne diseases |
| 100 | Leptospirosis |
| 102 | Yaws |
| 103 | Pinta |
| 104 | Other spirochaetal infection |
| 120 | Schistosomiasis |
| 121 | Other trematode infections |
| 122 | Echinococcosis |
| 123 | Other cestode infection |
| 124 | Trichinosis |
| 125 | Filarial infection and dracontiasis |
| E926 | Exposure to radiation |

## Coding Specific Categories

The following are the international linkages and notes with expansion and additions concerning the selection and modification of conditions classifiable to certain categories. They are listed in tabular order. Notes dealing with linkage appear at the categories from which the combination is EXCLUDED. Therefore, reference should be made to the category or code within the parentheses before making the final code assignment. For a more complete listing, refer to NCHS Instruction Manual, *Part 2c, NCHS Decision Tables for Classifying the Underlying Cause of Death, 1985.*

001-139 INFECTIOUS AND PARASITIC DISEASES

009.1 COLITIS, ENTERITIS, AND GASTROENTERITIS OF PRESUMED INFECTIOUS ORIGIN

009.3 DIARRHEA, OF PRESUMED INFECTIOUS ORIGIN

These subcategories are not to be used for underlying cause of death in the United States. If the listed conditions are stated to be "infectious," "septic," "dysenteric," or "epidemic," they should be classified to 009.0 or 009.2; if unspecified, the listed conditions should be classified as noninfectious diseases (558) unless otherwise indexed.

012 OTHER RESPIRATORY TUBERCULOSIS, EXPECT TUBERCULOUS PLEURISY IN 012.0
013-017 TUBERCULOSIS OF OTHER ORGANS

EXCLUDES with conditions in 011 (Pulmonary tuberculosis) (011) unless reported as the underlying cause of and with a specified duration exceeding that of the condition on 011.

035 ERYSIPELAS
037 TETANUS
038 SEPTICEMIA

Code to these disease when they follow vaccination or a slight injury (any condition in N910-N919, prick, splinter, minor cut, puncture (except of trunk), bruise or contusion of superficial tissues or external parts, burn of first degree); when they follow a more serious injury, code to the injury.

Examples: I(a) Tetanus
(b) Nail in foot
Accident: Stepped on nail

Code to tetanus (037).

I(a) Tetanus
(b) Fracture of hip

Code to fracture of hip (E887).

## 036.2 MENINGOCOCCEMIA

EXCLUDES with conditions in:

| | |
|---|---|
| 036.0 | Meningococcal meningitis (036.0) |
| 036.1 | Meningococcal encephalitis (036.1) |
| 036.3 | Waterhouse-Friderichsen syndrome, meningococcal (036.3) |

## 041 BACTERIAL INFECTION IN CONDITIONS CLASSIFIED ELSEWHERE AND OF UNSPECIFIED SITE

This category INCLUDES infection by bacterial organisms unspecified as to location or disease and not classifiable elsewhere. Specific disease conditions indicated to have been bacterial in origin are classified to the specified disease rather than to 041. Examples: staphylococcal enteritis is classified to 008.4 and pseudomonas pneumonia is classified to 482.1.

## 045 ACUTE POLIOMYELITIS

This category INCLUDES poliomyelitis specified as acute unless there is clear indication that death occurred more than one year after the onset of poliomyelitis. It also INCLUDES poliomyelitis not specified as acute if it is clearly indicated that death occurred less than one year after onset of the poliomyelitis. Otherwise poliomyelitis or its sequelae should be assigned to Late effects of acute poliomyelitis (138).

## 079 VIRAL INFECTION IN CONDITIONS CLASSIFIED ELSEWHERE AND OF UNSPECIFIED SITE

This category INCLUDES viral infections unspecified as to location or disease and not classified elsewhere. Specific disease conditions indicated to have been viral in origin are classified to the specific disease rather than to 079. Examples: adenovirus enteritis is classified to 008.6, and acute viral bronchitis is classified to 466.0.

## 137 LATE EFFECTS OF TUBERCULOSIS

This category INCLUDES conditions that are stated to be a late effect of tuberculosis classifiable to 010-018. It also includes tuberculosis stated to be arrested, cured, healed, inactive, old, or quiescent, whether or not the residual or late effect is specified, unless there is evidence of active tuberculosis.

## 138 LATE EFFECTS OF ACUTE POLIOMYELITIS

This category INCLUDES late effects of acute poliomyelitis classifiable to 045. The "late effects" include conditions specified as such, or as sequela, and those which were present one year or more after onset of the causal condition. It also includes poliomyelitis not specified as acute or active if interval between onset of poliomyelitis and death is not indicated or is indicated to be one year or more.

## 139 LATE EFFECTS OF OTHER INFECTIOUS AND PARASITIC DISEASES

This category INCLUDES late effects of all infectious and parasitic diseases in Chapter I except tuberculosis and poliomyelitis.

### 139.0 LATE EFFECTS OF VIRAL ENCEPHALITIS

This subcategory INCLUDES late effects of viral encephalitis classifiable to 049.8, 049.9, and 062-064. The "late effects" include conditions specified as such, or as sequela, and those which were present 1 year or more after onset of the causal condition.

### 139.1 LATE EFFECTS OF TRACHOMA

This subcategory INCLUDES late effects of trachoma classifiable to 076. The "late effects" include residuals of trachoma specified as healed or inactive and certain specified sequelae such as blindness, cicatricial entropion and conjunctival scars unless there is evidence of active infection.

### 139.8 LATE EFFECTS OF OTHER AND UNSPECIFIED INFECTIOUS AND PARASITIC DISEASES

The "late effects" INCLUDE residuals specified as late effects or conditions in 001-009, 020-041, 046-048, 049.0, 049.1, 050-061, 065-075, 077-136 specified as arrested, cured, healed, inactive, old, or quiescent unless there is evidence of active disease.

"Late effects" also INCLUDE chronic conditions reported as due to, or residual condition present 1 year or more after onset of conditions classifiable to categories 001-003, 020-022, 027.0, 032-037, 047, 048, 049.0, 049.1, 050, 052-056, 060, 066.2, 071-073, 080-083, and 130.

Examples: I(a) Heart failure
(b) Pneumonia
(c) Herpes meningitis 2 years

Code to late effects of other infectious and parasitic diseases (139.8).

I(a) Old Amebiasis

Code to late effects of other infectious and parasitic diseases (139.8).

## 140-239 NEOPLASMS

Separate categories have been provided for coding malignant neoplasms (140-208), benign neoplasms (210-228), carcinoma in situ (230-234), neoplasm of uncertain behavior (235-238), and neoplasms of unspecified nature (239). Categories and subcategories within these groupings identify the sites and/or morphological types of the neoplasms.

### A. Morphological Types

The Alphabetical Index contains a comprehensive listing of morphological types of neoplasms with indication as to whether the neoplasm should be coded as malignant, benign, carcinoma in situ, of uncertain behavior, or unspecified nature as well as to the coding by site. This may take the form of a reference to the appropriate column in the "Neoplasm" listing in the index when the morphological type could occur in a variety of organs, e.g.,

Adenoma, Villous (M8261/1) - see Neoplasm, uncertain behavior

or to a particular part of that listing when the morphological type arises in a particular type of tissue, e.g.,

Fibromyxoma (M8811/0) - see Neoplasm, connective tissue, benign.

It may give the code for the site assumed to be most likely when no site is specified, e.g.,

Astrocytoma (M9400/3)

specified sites - see Neoplasm, malignant

unspecified site 1919

or it may give a code to be used whatever site is reported when the vast majority of neoplasms of the morphological type occur in a particular site, e.g.,

Hepatocarcinoma (M8170/3) 1550.

Coders should, therefore, look up the morphological type in the Alphabetical Index before referring to the listing under "Neoplasm" for the site.

As indicated in the introduction to this manual, the M numbers and the accompanying fifth digits indicating behavior which appear following the morphological terms in the index listings will not be used in NCHS for mortality coding.

A morphological term ending in "osis," unless it is specifically indexed, should be coded in the same way as the tumor name to which "osis" has been added. For example, neuroblastomatosis should be coded in the same way as neuroblastoma, but hemangiomatosis, which is specifically indexed, is not coded in the same way as hemangioma.

It has not been possible to index all combinations of the order of prefixes in compound morphological terms. For example, the term "chondrofibrosarcoma" does not appear in the index, but "Fibrochondrosarcoma (M9220/3) - see Neoplasm, cartilage, malignant" does. Since the two terms have the same prefixes (in a different order) chondrofibrosarcoma should be coded the same as fibrochondrosarcoma.

## B. Multiple sites

If malignant neoplasms of more than one site are entered on the certificate, the site indicated as primary should be selected, regardless of the position of the conditions on the certificate. This indication may be:

1. the specification of one site as primary;

   Example: I(a) Carcinoma of mediastinum
   (b) Primary in bronchus

   Code to carcinoma of bronchus (162.9).

2. the specification of other sites as "secondary," "metastases" or "spread;"

   Examples: I(a) Carcinoma of breast with secondaries in brain

   Code to carcinoma of breast (174.9).

   I(a) Cancer of bladder with spread to kidney and adrenal glands

   Code to cancer of bladder (188.9).

3. an acceptable order of entry pointing to one site as primary;

   Example: I(a) Cancer of brain
   (b) Cancer of lung

   Code to cancer of lung (162.9). The order of entry indicates that this was the primary site.

Malignant neoplasm of lymph nodes not specified as primary should be assumed to be secondary.

Examples: I(a) Cancer in supraclavicular lymph node
(b)
(c)
II Gastric carcinoma

Code to cancer of stomach (151.9).

I(a) Carcinoma of lymph node

Code to the morphological type, site unspecified (199.1), since lymph node is considered secondary unless stated as primary.

I(a) Lymph node sarcomatosis

Code to 171.9, sarcomatosis of unspecified site.

If there is no indication as to which was the primary site or if it appears that there were two or more primary malignant neoplasms (for example, if sites are entered on the same line or in different Parts of the certificate), prefer a defined site to an ill-defined site in category 195. Otherwise, prefer the first mentioned.

Examples: I(a) Carcinoma, breast and cecum

Code to carcinoma of breast (174.9).

I(a) Carcinoma of pelvis
(b)
(c)
II Carcinoma of cervix

Code to carcinoma of cervix (180.9).

## C. Imprecise or doubtful descriptions of site

Neoplasms of sites prefixed by "peri," "para," "pre," "supra," "infra," etc. or described as in the "area" or "region" of a site, unless these terms are specifically indexed, should be coded as follows: for morphological types classifiable to one of the categories 170, 171, 172, 173, 191, or 192, code to the appropriate subdivision of that category; otherwise, code to the appropriate subdivision of 195 (other and ill-defined sites).

Examples: Melanoma of the groin area

Code to melanoma of trunk (172.5).

Peribiliary carcinoma

Code to carcinoma of abdomen (195.2).

Neoplasms described as of one site or another should be coded to the rubric that embraces both sites or, if no appropriate rubric exists, to "unspecified site."

Examples: I(a) Osteosarcoma of lumbar vertebra or sacrum

Code to osteosarcoma, unspecified site (170.9).

I(a) Carcinoma of sigmoid or splenic flexure

Code to carcinoma colon, unspecified (153.9).

I(a) Cancer of pancreas or lung

Code to cancer of unspecified site (199.1).

## D. Neoplasm of unspecified site

When there is no specification of the site of a neoplasm, code to "unspecified site" for the morphological type involved, even though the neoplasm is associated with some other condition (e.g., obstruction, hemorrhage, perforation) of a specified site.

Examples: I(a) Perforation of stomach
(b) Carcinoma

Code to 199.1.

I(a) Ureteric obstruction
(b) Sarcoma

Code to 171.9.

I(a) Hemorrhage of bladder
(b) Transitional cell carcinoma

Code to 199.1.

E. "Primary site unknown"

When the statement "primary site unknown" appears on a certificate, code to the category for "unspecified site" for the morphological type involved (e.g., adenocarcinoma 199.1, fibrosarcoma 171.9, osteosarcoma 170.9); any other sites of malignant neoplasm reported elsewhere on the certificate should be assumed to be secondary.

Examples: I(a) Cardio respiratory failure
(b) Malignant tumor of chest and abdomen
(c) Primary site unknown

Code to 199.1.

I(a) Leiomyosarcoma of face
(b) Primary unknown

Code to 171.9.

F. Secondary sites

196 Secondary and unspecified malignant neoplasm of lymph nodes
197 Secondary malignant neoplasm of respiratory and digestive system
198 Other secondary malignant neoplasm

The above categories are not to be used for underlying cause of death. Secondary neoplasm of specified sites, or of unspecified site, without mention of a primary site, should be coded to the category for "unspecified site" for the morphological type involved (e.g., carcinoma 199.1, sarcoma 171.9, melanoma 172.9).

Examples: I(a) Secondary carcinoma of brain

Code to 199.1.

I(a) Secondary osteosarcoma in ribs, spine and clavicle

Code to 170.9.

## G. Implication of malignancy

Mention on a certificate that a neoplasm has given rise to metastases or secondaries means that the neoplasm is malignant and it should be so coded even though the name of the neoplasm without mention of metastases would be classified to some other section of Chapter II.

Examples: I(a) Metastatic involvement of lymph nodes
(b) Carcinoma-in-situ of cervix, resected 2 years ago

Code to malignant neoplasm of cervix uteri (180.9).

I(a) Secondaries in lymph nodes and lung
(b) Brenner tumor

Code to malignant neoplasm of ovary (183.0).

## H. "Metastatic" cancer

The adjective "metastatic" is used ambiguously, sometimes to mean secondary deposits from a primary elsewhere and sometimes to mean a metastasizing primary. No arbitrary rule can satisfactorily solve this problem since usage varies in different languages and different countries, but the following rule is proposed as an expedient when there is doubt as to the meaning intended.

1. Cancer described as "metastatic from" a site should be interpreted as primary of that site, and cancer described as "metastatic to" a site should be interpreted as secondary of that site.

Examples: I(a) Carcinoma in lymph nodes and lungs
(b) Metastatic from nasopharynx

Code to primary malignant neoplasm of nasopharynx (147.9).

I(a) Metastatic cancer from liver to lung

Code to primary malignant neoplasm of liver (155.0).

2. If two or more sites are reported and all are qualified as "metastatic," code as for "primary site unknown" in E above.

Examples: I(a) Metastatic carcinoma of lung
(b) Metastatic carcinoma of breast

Code to 199.1.

I(a) Metastatic melanoma of lung and liver

Code to 172.9.

3. If only one site is reported and this is qualified as "metastatic," proceed as follows:

   a. code to the category for "unspecified site" for the morphological type concerned unless this code is 199.

      Examples: I(a) Metastatic renal cell carcinoma of lung

      Code to 189.0.

      I(a) Metastatic osteosarcoma of arm

      Code to 170.9.

   b. when the morphological type is 199, code as primary malignant neoplasm of the site except for the following sites which should be coded to 199:

      any site classifiable to 195
      bone
      brain
      diaphragm
      heart
      liver
      lymph nodes
      mediastinum
      meninges
      peritoneum
      pleura
      retroperitoneum
      spinal cord

      Examples: I(a) Metastatic lung cancer

      Code to 162.9.

      I(a) Metastatic cancer of brain

      Code to 199.1.

      I(a) Metastatic cancer of hip

      Code to 199.1.

4. If no site is reported, but the morphological type is qualified as "metastatic" code as for "primary site unknown" in E above.

   Example: I(a) Metastatic astrocytoma

   Code to 191.9.

5. If two or more sites are reported and some are qualified as "metastatic" while others are not, proceed as follows:

   a. metastatic cancer of sites listed in 3.b. should be considered as secondary

   b. when sites other than these are qualified as "metastatic," take into account the order of entry on the certificate and any statement of duration.

Examples: I(a) Carcinoma of lung
(b) Metastatic carcinoma of breast

Code to 174.9.

I(a) Carcinoma of brain
(b) Metastatic carcinoma of lung

Code to 162.9.

I(a) Cancer of lung
(b) Metastatic cancer of brain

Code to 162.9.

## I. Leukemia

Acute exacerbation of or blastic crisis in chronic leukemia should be coded to the chronic form.

Example: I(a) Acute and chronic lymphatic leukemia

Code to 204.1 (chronic lymphatic leukemia).

Acute leukemia of any type should be coded to the acute form regardless of the interval betwen onset and death.

When a condition classifiable to categories 200-202 is reported as terminating in leukemia, code to 200-202.

## 244.0 POSTSURGICAL HYPOTHYROIDISM

Not to be used for underlying cause mortality coding. If the reason for the surgery is not known and this information cannot be obtained, code to 246.9. See Operations, page 41.

## 251.3 POSTSURGICAL HYPOINSULINEMIA

Not to be used for underlying cause mortality coding. If the reason for the surgery is not known and this information cannot be obtained, code to 577.9. See Operations, page 41.

## 268.1 LATE EFFECTS OF RICKETS

The "late effects" INCLUDE any condition specified as rachitic or due to rickets and present 1 year or more after onset, or stated to be a late effect or sequela of rickets.

## 292 DRUG PSYCHOSIS

EXCLUDES with mention of drug dependence (304).

## 293-294 TRANSIENT AND OTHER ORGANIC PSYCHOTIC CONDITIONS
## 299.1 DISINTEGRATIVE PSYCHOSIS

Not to be used if the underlying physical condition is known.

## 303 ALCOHOL DEPENDENCE SYNDROME

EXCLUDES with:

- alcoholic psychosis in 291.0-291.3, 291.5-291.9 (291.0-291.3, 291.5-291.9)
- physical complication such as:
  - cirrhosis of liver (571.2)
  - epilepsy (345.-)
  - gastritis (535.3)

## 304 DRUG DEPENDENCE

INCLUDES drug dependence with mention of acute narcotism, drug abuse (acute), overdose of, intoxication by, or poisoning by dependence-producing drugs, accidental or undetermined whether accidental or purposeful.

## 305.1 NONDEPENDENT ABUSE OF TOBACCO

EXCLUDES when reported as the underlying cause of physical conditions such as:

bronchitis (490-491)
emphysema (492)
ischemic heart disease (410-414)

## 310 SPECIFIC NONPSYCHOTIC MENTAL DISORDERS FOLLOWING ORGANIC BRAIN DAMAGE
## 317-319 MENTAL RETARDATION

Not to be used if the underlying physical condition is known.

## 326 LATE EFFECTS OF INTRACRANIAL ABSCESS OR PYOGENIC INFECTION

The "late effects" INCLUDE conditions in 320-325 specified as such, or as sequela, or present 1 year or more after onset.

## 331.0 ALZHEIMER'S DISEASE
## 331.1 PICK'S DISEASE

EXCLUDES with mention of dementia (290.1).

## 331.2 SENILE DEGENERATION OF BRAIN

EXCLUDES with mention of dementia (290.0).

## 342 HEMIPLEGIA

Not to be used if the cause of the hemiplegia is known.

## 343 INFANTILE CEREBRAL PALSY

This category INCLUDES cerebral paralysis as a late effect of conditions in categories 760-779, Certain conditions originating in the perinatal period, when death occurs at age 28 days and over.

Examples: Male 2 years
I(a) Pneumonia
(b) Cerebral palsy
(c) Traumatic birth

Code to cerebral palsy (343.9), since "paralysis" is mentioned and the child lived past the neonatal period (28 days).

Female 7 years
I(a) Pneumonia
(b) Cerebral palsy
(c) Anoxia at birth

Code to cerebral palsy, the late effect of anoxia at birth (343.9).

## 344 OTHER PARALYTIC SYNDROMES

Not to be used if the cause of the paralysis is known.

## 345 EPILEPSY

INCLUDES accidents resulting from epilepsy.

EXCLUDES epilepsy due to trauma (code to the appropriate categories in Chapter XVII and in the Supplementary E Code; if the nature and cause of injury is not known, code to 854.0 and E928.9).

## 369 BLINDNESS AND LOW VISION

Not to be used if the antecedent condition is known.

## 383.3 COMPLICATIONS FOLLOWING MASTOIDECTOMY

Not to be used for underlying cause mortality coding. If the reason for the surgery is not known and this information cannot be obtained, code to 385.9. See Operations, page 41.

## 389 DEAFNESS

Not to be used if the antecedent condition is known.

## 390-398 ACUTE AND CHRONIC RHEUMATIC HEART DISEASES

*Multiple heart conditions with one heart condition specified as rheumatic.* If any disease of the heart is stated to be of rheumatic origin, or is specified to be rheumatic, such qualifications will apply to each specific heart (classifiable to 420, 421.9, 422, 423, 424, 429.0, .1, .2, .3, .8, .9) condition reported, even though it is not so qualified, unless another origin such as arteriosclerosis is mentioned.

| | | | Codes for Record |
|---|---|---|---|
| Examples: | I(a) | Acute bacterial endocarditis | 421.0 |
| | (b) | Myocarditis | 398.0 |
| | (c) | Rheumatic endocarditis | 397.9 |

Code to rheumatic endocarditis (397.9), selected by the General rule. If the rheumatic endocarditis had been reported in Part II, rheumatic myocarditis would have been selected.

| | | Codes for Record |
|---|---|---|
| I(a) | Acute congestive failure | 428.0 |
| (b) | Hypertensive myocarditis | 402.9 |
| (c) | Rheumatic endocarditis | 397.9 |

Code to hypertensive myocarditis (402.9), selected by Rule 1.

## 391 RHEUMATIC FEVER WITH HEART INVOLVEMENT

This category INCLUDES active rheumatic heart disease. If there is no statement that the rheumatic process was active at the time of death, assume activity (391 with fourth digits .0, .1, .2, .8, or .9) for each rheumatic heart disease (393-398) on the certificate in any one of the following situations.

A. Rheumatic fever or any rheumatic heart disease is stated to be active or recurrent

|  |  |  | Codes for Record |
|---|---|---|---|
| Example: | I(a) | Mitral stenosis | 391.1 |
|  | (b) | Active rheumatic myocarditis | 391.2 |

Code to other active rheumatic heart disease (391.8). Active rheumatic myocarditis (391.2) is selected by the General rule and rheumatic mitral stenosis is classified to 391.1 when it is reported with an active rheumatic heart disease. Therefore, the underlying cause is 391.8 since this category includes multiple types of heart involvement.

B. The duration of rheumatic fever is less than 1 year

|  |  |  |  | Codes for Record |
|---|---|---|---|---|
| Example: | I(a) | Congestive heart failure |  | 391.8 |
|  | (b) | Rheumatic fever | 2 months | 390 |

Code to other active rheumatic heart disease (391.8).

C. One or more of the heart diseases is stated to be acute or subacute (this does not apply to "rheumatic fever" stated to be acute or subacute)

|  |  |  | Codes for Record |
|---|---|---|---|
| Examples: | I(a) | Acute myocardial dilatation | 391.8 |
|  | (b) | Rheumatic fever | 390 |

Code to other active rheumatic heart disease (391.8).

|  |  | Codes for Record |
|---|---|---|
| I(a) | Acute myocardial insufficiency | 391.2 |
| (b) | Rheumatic fever | 390 |

Code to active rheumatic myocarditis (391.2).

D. The term "pericarditis" is mentioned

|  |  |  | Codes for Record |
|---|---|---|---|
| Example: | I(a) | Acute pericarditis | 391.0 |
|  | (b) | Rheumatic mitral stenosis | 391.1 |

Code to other acute rheumatic heart disease (391.8) which includes multiple heart involvement.

E. The term(s) "carditis," "endocarditis," (aortic) (mitral) (pulmonary) (tricuspid), "myocarditis," "pancarditis," or "heart disease" with a stated duration of less than 1 year is mentioned

| | | | | Codes for Record |
|---|---|---|---|---|
| Example: | I(a) | Congestive heart failure | | 428.0 |
| | (b) | Endocarditis | 6 mos | 391.1 |
| | (c) | Rheumatic fever | 10 yrs | 390 |

Code to active rheumatic endocarditis (391.1).

F. The term(s) in E. without a duration is mentioned and the age of the decedent is less than 15 years

| | | | Codes for Record |
|---|---|---|---|
| Example: | Age | 5 years | |
| | I(a) | Mitral and aortic endocarditis | 391.1 |
| | (b) | Rheumatic fever | 390 |

Code to active rheumatic endocarditis (391.1).

## 394.9 DISEASES OF MITRAL VALVE, OTHER AND UNSPECIFIED

EXCLUDES the listed conditions when of unspecified cause with conditions in 424.0 (424.0).

## 397 DISEASES OF OTHER ENDOCARDIAL STRUCTURES

EXCLUDES with conditions in:

394 (Diseases of mitral valve) (394)
395 (Diseases of aortic valve) (395)
396 (Diseases of mitral and aortic valves) (396)

## 397.1 RHEUMATIC DISEASES OF PULMONARY VALVE

EXCLUDES with conditions in:

397.0 (Diseases of tricuspid valve) (397.0)

## 401 ESSENTIAL HYPERTENSION

EXCLUDES conditions in 401 with mention of conditions in:

| | | |
|---|---|---|
| 402 | (Hypertensive heart disease) (402) | |
| 403 | (Hypertensive renal disease) (403) | |
| 404 | (Hypertensive heart and renal disease) (404) | |
| 410-414 | (Ischemic heart disease) (410-414-) | |
| 430-438 | (Cerebrovascular disease) (430-438) | |
| 580-581 | (Nephritis and nephrotic syndrome) (580-581) | |
| 582-583 | (Nephritis except "nephropathy (chronic)" and "chronic renal disease") (582-583) | |
| 585 | Chronic renal failure | (403) (Hypertensive renal disease) |
| 586 | Renal failure unspecified | |
| 587 | Renal sclerosis unspecified | |

EXCLUDES conditions in 401 when reported as the underlying cause of:

| | | |
|---|---|---|
| 362.1 | (Retinopathy) (362.1) | |
| 394.0 | Mitral stenosis not specified as rheumatic (424.0) | |
| 394.2 | Mitral stenosis with insufficiency not specified as rheumatic (424.0) | |
| 394.9 | Other and unspecified diseases of mitral valve not specified as rheumatic (424.0) | |
| 396 | Diseases of mitral and aortic valves not specified as rheumatic (424.0) | |
| 397.0 | Diseases of tricuspid valve not specified as rheumatic (424.2) | |
| 424 | (Other diseases of endocardium) (424-) | |
| 428 | Heart failure | (402) (Hypertensive heart disease) |
| 429.0 | Myocarditis, unspecified | |
| 429.1 | Myocardial degeneration | |
| 429.2 | Cardiovascular disease, unspecified | |
| 429.3 | Cardiomegaly | |
| 429.8 | Other ill-defined heart disease | |
| 429.9 | Unspecified descriptions of heart disease | |
| 582.9 | "Chronic nephropathy" or "chronic renal disease," only | (403) |
| 583.9 | "Nephropathy," only | |
| 593.9 | "Renal disease," only | |

## 402 HYPERTENSIVE HEART DISEASE

EXCLUDES conditions in 402 with conditions in:

| | | |
|---|---|---|
| 403 | Hypertensive renal disease | (404) |
| 404 | (Hypertensive heart and renal disease) | |
| 410-414 | (Ischemic heart disease) (410-414-) | |
| 585 | Chronic renal failure | (404) (Hypertensive heart and renal disease) |
| 586 | Renal failure, unspecified | |
| 587 | Renal sclerosis, unspecified | |

## 403 HYPERTENSIVE RENAL DISEASE

EXCLUDES conditions in 403 with conditions in:

402 Hypertensive heart disease }
404 (Hypertensive heart and renal disease) } – (404-)
410-414 (Ischemic heart disease) (410-414)

EXCLUDES conditions in 403 when reported as the underlying cause of:

428 Heart failure }
429.0 Myocarditis }
.1 Myocardial degeneration }
.2 Cardiovascular disease, unspecified } – (404-)
.3 Cardiomegaly }
.8 Other ill-defined descriptions of heart disease }
429.9 Unspecified, ill-defined descriptions of heart disease }

## 404 HYPERTENSIVE HEART AND RENAL DISEASE

EXCLUDES conditions in 404 with conditions in:

410-414 (Ischemic heart disease) (410-414)

## 405 SECONDARY HYPERTENSION

Not to be used for underlying cause mortality coding.

## 411 OTHER ACUTE AND SUBACUTE FORMS OF ISCHEMIC HEART DISEASE
## 412 OLD MYOCARDIAL INFARCTION
## 413 ANGINA PECTORIS
## 414 OTHER FORMS OF CHRONIC ISCHEMIC HEART DISEASE

EXCLUDES conditions in 411-414 with conditions in:

410 (Acute myocardial infarction) (410)

## 416.9 PULMONARY HEART DISEASE, UNSPECIFIED

EXCLUDES conditions in 416.9 with conditions in:

737.3 Kyphoscoliosis and scoliosis (416.1) (Kyphoscoliotic heart disease)

EXCLUDES any condition in 416.9 when any pulmonary condition is reported as the underlying cause - CODE the pulmonary condition.

## 424 OTHER DISEASES OF ENDOCARDIUM

When more than one valve is mentioned, priority in classification is in the order listed, i.e., mitral (.0), aortic (.1), tricuspid (.2), pulmonary (.3).

## 426 CONDUCTION DISORDERS
## 427 CARDIAC DYSRHYTHMIAS

EXCLUDES conditions in 426-427 with conditions in:

410-414 (Ischemic heart disease) (410-414)

## 428 HEART FAILURE

EXCLUDES conditions in 428 with conditions in:

410-414 (Ischemic heart disease) (410-414)
737.3 Kyphoscoliosis and scoliosis (416.1) (Kyphoscoliotic heart disease)

### 428.9 HEART FAILURE, UNSPECIFIED

EXCLUDES conditions in 428.9 with conditions in:

518.4 Acute edema of lung, unspecified (428.1) (left heart failure)

## 429.0 MYOCARDITIS
## .1 MYOCARDIAL DEGENERATION
## .2 CARDIOVASCULAR DISEASE
## .3 CARDIOMEGALY

EXCLUDES conditions in 429.0-.3 with conditions in:

410-414 (Ischemic heart disease) (410-414-)

## 429.4 FUNCTIONAL DISTURBANCES FOLLOWING CARDIAC SURGERY

Not to be used for underlying cause coding. If the reason for the surgery is not known and this reason cannot be obtained, CODE to 429.9. See rules for Operations.

## 429.5 RUPTURE OF CHORDAE TENDINAE
## .6 RUPTURE OF PAPILLARY MUSCLE
## .8 OTHER ILL-DEFINED DESCRIPTIONS OF HEART DISEASE

EXCLUDES conditions in above categories with conditions in:

410-414 (Ischemic heart disease) (410-414-)

## 429.9 UNSPECIFIED DESCRIPTIONS OF HEART DISEASE

EXCLUDES conditions in 429.9 with conditions in:

410-414 (Ischemic heart disease) (410-414-)
518.4 Acute edema of lung, unspecified (428.1) (Left heart failure)
737.3 Kyphoscoliosis and scoliosis (416.1) (Kyphoscoliotic heart disease)

## 437.0 CEREBRAL ATHEROSCLEROSIS

EXCLUDES conditions in 437.0 with conditions in:

430-434 (Cerebral hemorrhage and infarction) (430-434)
436 (Acute but ill-defined cerebrovascular disease) (436)

EXCLUDES conditions in 437.0 when reported as the underlying cause of conditions in:

294.9 Dementia, unspecified (290.4) (Arteriosclerotic dementia)
332.0 (Paralysis agitans) (332.0)

## 438 LATE EFFECTS OF CEREBROVASCULAR DISEASE

The "late effects" INCLUDE conditions in 430-437 specified as such or as sequela. "Late effects" also INCLUDE chronic conditions reported as due to, or residual conditions present 1 year or more after onset of conditions classifiable to 430-432, 434, 436, and "embolism" and "thrombosis" only in 433.

Example: I(a) Pneumonia
(b) Sepsis and pulmonary congestion
(c) Cerebral infarction 2 years ago

Code to late effects of cerebral infarction (438) since the interval between onset and death is over 1 year.

## 440 ATHEROSCLEROSIS

EXCLUDES conditions in 440 with conditions in;

401-404 (Hypertensive disease) (401-404)
410-414 (Ischemic heart disease) (410-414)
429.0 (Myocarditis, unspecified) (429.0)
.1 (Myocardial degeneration) (429.1)
.2 (Cardiovascular disease, unspecified) (429.2)
430-438 (Cerebrovascular disease) (430-438)

EXCLUDES conditions in 440 when reported as the underlying cause of:

| | | |
|---|---|---|
| 394.0 | Mitral stenosis not specified as rheumatic | (424.0) |
| .2 | Mitral stenosis with insufficiency not specified as rheumatic | |
| .9 | Other and unspecified diseases of mitral valve not specified as rheumatic | |
| 396 | Diseases of mitral and aortic valves not specified as rheumatic | |
| 397.0 | Diseases of tricuspid valve not specified as rheumatic (424.2) | |
| 424 | (Other diseases of endocardium) (424) | |
| 441-447 | (Other diseases of arteries and arterioles) (441-447) | |
| 557 | (Vascular insufficiency of intestine) (557) | |
| 582.8 | "Chronic interstitial nephritis" only | (403) |
| 582.9 | "Chronic Bright's disease," "chronic nephritis," "chronic nephropathy," and "chronic renal disease" only | |
| 583.8 | "Interstitial nephritis" only | |
| 583.9 | "Bright's disease," "nephritis," and "nephropathy," only | |
| 587 | Renal sclerosis, unspecified | |
| 593.9 | "Renal disease NOS," only | |

### 440.9 ATHEROSCLEROSIS, GENERALIZED AND UNSPECIFIED

EXCLUDES conditions in 440.9 only with:

785.4 Gangrene (440.2) (Atherosclerosis of arteries of extremities)

EXCLUDES conditions in 440.9 only when reported as the underlying cause of:

294.9 Dementia, unspecified (290.4) (Arteriosclerotic dementia)
332.0 (Paralysis agitans) (332.0)

## 457.0 POSTMASTECTOMY SYNDROME

Not to be used for underlying cause mortality coding. If the reason for surgery is not known and this information cannot be obtained, CODE to 611.9. See rules for Operations.

460 ACUTE NASOPHARYNGITIS (COMMON COLD)
465 ACUTE UPPER RESPIRATORY INFECTIONS OF MULTIPLE AND UNSPECIFIED SITES

EXCLUDES when reported as the underlying cause of serious conditions such as:

meningitis (322.9)
intracranial abscess (324.0)
otitis media (381, 382)
mastoiditis and related conditions (383)
pneumonia and influenza (480-483, 485-487)
bronchitis and bronchiolitis (466, 490, 491)
acute nephritis (580.0-580.9)

466.0 ACUTE BRONCHITIS

EXCLUDES with conditions in 491 (Chronic bronchitis) (491)

490 BRONCHITIS NOT SPECIFIED AS ACUTE OR CHRONIC

EXCLUDES with conditions in:

| | |
|---|---|
| 492 | (Emphysema) (491.2) |
| 496 | (Chronic airways obstruction, not elsewhere classified) (491.2) |

491.9 CHRONIC BRONCHITIS, UNSPECIFIED

EXCLUDES with conditions in 492 (Emphysema) (491.2)

EXCLUDES when selected as the underlying cause (see note at 493 below) if asthma is also mentioned (491.2).

492 EMPHYSEMA

EXCLUDES with conditions in:

| | |
|---|---|
| 490 | (Bronchitis not specified as acute or chronic) (491.2) |
| 491 | (Chronic bronchitis) (491.2) |

## 493 ASTHMA

When asthma and bronchitis (acute) (chronic) are separately reported on the same certificate of cause of death, the underlying cause should be selected by applying the General rule or Rules 1, 2, or 3 in the normal way. Neither term should be treated as an adjectival modifier of the other.

## 500 COALWORKER'S PNEUMOCONIOSIS
## 501 ASBESTOSIS
## 502 PNEUMOCONIOSIS DUE TO OTHER SILICA OR SILICATES
## 505 PNEUMOCONIOSIS, UNSPECIFIED

EXCLUDES with conditions in 011 (Pulmonary tuberculosis) (011)

## 518.4 ACUTE EDEMA OF LUNG, UNSPECIFIED

EXCLUDES with conditions in:

428.9 (Heart failure, unspecified) (428.1)
429.9 (Unspecified descriptions of heart disease) (428.1)

## 564.2 POSTGASTRIC SURGERY SYNDROME
## 564.3 VOMITING FOLLOWING GASTROINTESTINAL SURGERY
## 569.6 COLOSTOMY OR ENTEROSTOMY MALFUNCTION
## 576.0 POSTCHOLECYSTECTOMY SYNDROME
## 579.2 BLIND LOOP SYNDROME
## 579.3 OTHER AND UNSPECIFIED POSTSURGICAL NONABSORPTION

Not to be used for underlying cause mortality coding. If the reason for the surgery is not known and this information cannot be obtained, CODE to 537.9, 537.9, 569.9, 575.9, 569.9, and 569.9 respectively. See Operations, page 41.

## 580 ACUTE GLOMERULONEPHRITIS

EXCLUDE when reported as the underlying cause of conditions in 582 (Chronic glomerulonephritis) (582).

585 CHRONIC RENAL FAILURE
586 RENAL FAILURE, UNSPECIFIED
587 RENAL SCLEROSIS, UNSPECIFIED

EXCLUDES with conditions in:

401 (Essential Hypertension) (403)
402 (Hypertensive heart disease) (404)
403 (Hypertensive renal disease) (403)
404 (Hypertensive heart and renal disease) (404)

606 INFERTILITY, MALE
628 INFERTILITY, FEMALE

Not to be used if the causative condition is known.

630-638 PREGNANCY WITH ABORTIVE OUTCOME

When a condition classifiable to one of these categories is reported with a complication (conditions listed in 639), code the underlying cause to 630-638 even though a condition listed in categories 647-648 is reported.

When a condition classifiable to 630-638 is reported without mention of a complication, a condition listed in 647-648 is preferred.

639 COMPLICATIONS FOLLOWING ABORTION AND ECTOPIC AND MOLAR PREGNANCIES

Not to be used for underlying cause mortality coding.

The following three-digit codes will be used for the underlying cause of death. NCHS will not use the fourth digits.

640-641
643-645
650-676

640-648 COMPLICATIONS MAINLY RELATED TO PREGNANCY
650-659 NORMAL DELIVERY, AND OTHER INDICATIONS FOR CARE IN PREGNANCY, LABOR AND DELIVERY
650-669 COMPLICATIONS OCCURRING MAINLY IN THE COURSE OF LABOR AND DELIVERY
670-676 COMPLICATIONS OF PUERPERIUM

Priority in classification is given to a direct obstetric cause (640-646, 651-676) over an indirect obstetric cause (647-648).

## 652 MALPOSITION AND MALPRESENTATION OF FETUS

EXCLUDES with condition in 653 (Disproportion) (653)

## 737.3 KYPHOSCOLIOSIS AND SCOLIOSIS

EXCLUDES with conditions in:

| | |
|---|---|
| 416.9 | (Pulmonary heart disease, unspecified) (416.1) |
| 428 | (Heart failure) (416.1) |
| 429.9 | (Unspecified descriptions of heart disease) (416.1) |

## 760-779 CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD

EXCLUDES residual cerebral paralysis at ages four weeks or over (333.7, 343).

## 765 DISORDERS RELATING TO SHORT GESTATION AND UNSPECIFIED LOW BIRTHWEIGHT
## 766 DISORDERS RELATING TO LONG GESTATION AND HIGH BIRTHWEIGHT

Not to be used if any other cause of perinatal mortality is reported.

## 768.0 FETAL DEATH FROM ASPHYXIA OR ANOXIA BEFORE ONSET OF LABOR OR AT UNSPECIFIED TIME
## 768.1 FETAL DEATH FROM ASPHYXIA OR ANOXIA DURING LABOR

These categories are not to be used for underlying cause of death.

## 798.0 SUDDEN INFANT DEATH SYNDROME

This category INCLUDES the following terms causing death at ages under 1 year.

- Cot death
- Crib death
- SDII, SID, SIDS, SUD, SUDI, SUID
- Sleep apnea syndrome
- Sudden (unexpected) (unattended) (unexplained):
  - death (cause unknown) (in infancy) (syndrome)
  - infant death (syndrome)

EXCLUDES the listed conditions causing death at ages 1 year or over (798.1).

## E800-E999 SUPPLEMENTARY CLASSIFICATION OF EXTERNAL CAUSES OF INJURY AND POISONING (E CODE)

The E Code will be used for single cause tabulation of the underlying cause of death when the morbid condition is classifiable to Chapter XVII Injury and Poisoning.

A. Successive external causes. Where successive external events operate to cause death, assignment is to the initiating event except where this was a trivial accident leading to a more serious one. In the latter case, the trivial event may be ignored.

B. Slight injuries. When a slight injury is involved as a cause of death, the Rules for Selection are applied. Slight injuries are trivial conditions rarely causing death unless a more serious condition such as tetanus resulted from the slight injury. Therefore, where a slight injury is selected, Rule 6, Trivial conditions is usually applicable. For the purpose of these rules, slight injuries comprise superficial injuries such as:

abrasions
bite of insect (non-venomous)
blister
bruise
burn of first degree
contusion (external)
exposure NOS
minor cut
prick
puncture except trunk
scratch
splinter

For slight injury resulting in erysipelas, tetanus, or septicemia, see categories 035, 037, and 038 on page 49.

C. Accident information entered in space outside Part I and Part II. When information concerning an accident is reported only in a space specifically provided for such information outside of Parts I and II of the Medical Certificate Form, inquiry should be made concerning the relationship of the accident to the death and to the other causes reported. If no information is received from the inquiry, the assignment is made by application of the Rules for Selection to the causes reported in Parts I and II.

D. Accident due to disease condition. When a disease condition, such as cerebral hemorrhage, heart attack, diabetic coma, or alcoholism is indicated *by the certifier to be the underlying cause of an accident*, the assignment is made *to the accidental cause unless there is evidence* that the death occurred prior to the accident. This provision does not pertain to:

1. asphyxia from aspiration of mucus or vomitus as a result of a disease condition

2. a fall from a pathological fracture or disease of the bone.

3. aspiration of milk or other food due to diseases which presumably affect the ability to control the process of swallowing, for example, cancer of the throat or a disease resulting in paralysis.

4. accidents resulting from epilepsy (345).

E. Found injured on highway. See category E819 in Volume 1.

F. Complication of trauma for purposes of applying Selection Rule 3. See note under Selection Rule 3, page 15.

## E800-E845 TRANSPORTATION ACCIDENT

In *all* of the *transport accidents* (E800-E845), the fourth digit represents the status of the victim, i.e., whether the decedent was pedestrian, pedal cyclist, occupant of vehicle, stevedore, employee, etc. For each means of transportation, there is a different set of fourth digits. Each means of transportation is preceded by its set of fourth digits in Volume 1.

*See* also Definitions and examples relating to transport accidents, Volume 1, pages 547-552.

When multiple deaths occur from the same transportation accident, all the certifications should be examined, and when appropriate, the information obtained from one may be applied to all. For example, if the pilot of an aircraft is found to have been a military pilot, deaths of all persons on the plane should be assigned to .1 Occupants of military aircraft. If the pilot is reported to have been a commercial transport pilot, the deaths should be charged to injury in commercial "transport" aircraft, .2 Crew or .3 Other occupants of commercial aircraft.

There may be other information available such as newspaper articles. A query should be sent to the certifier if necessary to obtain the information.

## E810-E819 MOTOR VEHICLE TRAFFIC ACCIDENTS

A motor vehicle accident is assumed to be a traffic accident occurring on the trafficway unless another place is specified.

In classifying motor vehicle *traffic* accidents, a victim of less than 14 years of age is assumed to be a passenger provided there is evidence that the decedent was an occupant of a motor vehicle. A statement such as "thrown from car," "struck head on dashboard," or "carbon monoxide poisoning" is sufficient.

## E810-E819 MOTOR VEHICLE TRAFFIC ACCIDENTS

Examples: Male 22
I(a) Massive intrathoracic and
(b) abdominal hemorrhage
(c) Auto vs. motor bike accident

Code to unspecified person in a motor vehicle traffic accident involving collision with another motor vehicle (E812.9).

Male 26
I(a) Fractures of ribs, pelvis, femur
(b) Contusions of pancreas and kidney
(c) Hemorrhage
Acc. Was driver of motorcycle which collided with taxicab.

Code to motorcyclist involving collision with another motor vehicle (E812.2).

Female 4
I(a) Fractured skull
(b) Struck head on windshield when car
(c) struck tree felled across road by lightning

Code to passenger of motor vehicle involving collision with object on trafficway (E815.1).

Male 22
I(a) Third degree burns
(b) Auto accident - car overturned
(c) Acute alcoholism

Code to unspecified person in a car overturning without antecedent collision on roadway or subsequent collision on highway (E816.9).

## E820-E825 MOTOR VEHICLE NONTRAFFIC ACCIDENTS

### E820 NONTRAFFIC ACCIDENT INVOLVING MOTOR DRIVEN SNOW VEHICLES

This category includes accidents involving a snowmobile unless there is evidence that the accident occurred on the highway. A collision between a motor vehicle and a snowmobile will be classified as a traffic accident unless specified as nontraffic.

Examples: Female 12
I(a) Head injuries
(b) Overturning snowmobile

Code to unspecified person in a nontraffic accident involving motor-driven snow vehicle (E820.9).

Male 27
I(a) Multiple injuries
(b) Driver of snowmobile which collided with auto

Code to driver of motor vehicle involved in collision with another motor vehicle (E812.0).

## E840-E845 AIR AND SPACE TRANSPORT ACCIDENTS

For air and space transport accidents, it will be assumed that the victim was an occupant.

Where death of *military personnel* is reported with no specification as to whether the airplane was a military craft, other information on the certificate may be used for making the proper assignment.

Where there is a single death, the information that the decedent was a member of the Air Force or was a military pilot, *and was at work*, will be considered as indicating military aircraft.

## E850-E858 ACCIDENTAL POISONING BY DRUGS, MEDICAMENTS AND BIOLOGICALS

These categories include deaths due to drug poisoning, accidental overdose of drug, wrong drug given or taken in error, and drug taken inadvertently, whether or not the drug was given in treatment.

Examples: Male 2 years
I(a) Overdose of aspirin
(b) Flu and cold
(c)
II Aspirin given for fever - 10 days

Code to E850.1 accidental poisoning by salicylates

Female 29 years
I(a) Poisoning by barbiturates

Code to E851 accidental poisoning by barbiturates

EXCLUDES poisoning, accidental or undetermined whether accidental or purposeful, if drug dependence is mentioned (304).

When components of combinations of medicinal agents classifiable to E850-E858 are involved, proceed as follows:

A. If one component of the combination is specified as the cause of death, code to that component.

B. If one component is not specified as the cause of death, code to the category provided for the combination, e.g., mixed sedatives (E852.5).

C. If the components are classified to the same three-digit category, code to the appropriate subcategory for "Other;" if the components are classified to different three-digit categories, code to E858.8.

D. Combinations of medicinal agents with alcohol should be coded to the medicinal agent.

Examples: Male 25
I(a) Acute respiratory failure due to
(b) synergistic action of alcohol
(c) and darvon compound

Code to accidental poisoning by other nonnarcotic analgesics (E850.5).

Male 40
I(a) Alcohol and barbiturate intoxication

Code to accidental poisoning by barbiturates (E851). Alcoholic intoxication or poisoning reported in combination with medicinal agents is classified to poisoning by the medicinal agents.

## E868.2 ACCIDENTAL POISONING BY MOTOR VEHICLE EXHAUST GAS

Deaths from carbon monoxide poisoning from motor vehicle exhaust gas which occur while "sleeping in car" or while "sitting in car" with no indication that the car was in transit will be coded to this category rather than to motor vehicle accident (E818, E825).

## E870-E876 MISADVENTURE TO PATIENTS DURING SURGICAL AND MEDICAL CARE

These categories are limited to deaths explicitly indicated to be the result of an error or accident during medical care. Deaths due to error or accident are classified here whether or not the condition requiring treatment is stated. (See Rule 12.)

| Examples: Male | 50 years | Codes for Record |
|---|---|---|
| I(a) | Shock | 785.5 |
| (b) | Laceration of liver | 998.2 |
| (c) | Needle biopsy | E870.5 |

Code to accidental cut (laceration) during needle biopsy (E870.5). "Laceration" is an explicit indication of accident during medical care.

| Female | 25 years | Codes for Record |
|---|---|---|
| I(a) | Peritonitis | 567.9 |
| (b) | Perforated jejunum | 998.2 |
| (c) | Laparotomy for | E870.0 |
| | carcinoma of small bowel | 152.9 |

Code to accidental perforation during a surgical procedure (E870.0). Classification is made to the accident in medical care even though the reason for surgery was stated. See Rule 12.

## E878-E879 SURGICAL AND MEDICAL PROCEDURES AS THE CAUSE OF ABNORMAL REACTION OF PATIENT OR LATER COMPLICATION, WITHOUT MENTION OF MISADVENTURE AT THE TIME OF PROCEDURE

A complication or reaction classifiable to categories 996-999 may be used as a guide to indicate that a death should be classified to E878-E879. Most terminal conditions may be considered a complication when reported due to a procedure and may be classified to the appropriate Nature of injury code except when the complication is specifically classified elsewhere, i.e., Post-operative pulmonary insufficiency (518.5) or post-operative pulmonary edema (518.4).

| Examples: Male 60 years | Codes for Record |
|---|---|
| I(a) Pneumonia | 997.3 |
| (b) Operation | E878.9 |

Code to surgical procedure as the cause of abnormal reaction of patient (E878.9). Post-operative pneumonia is indexed to Chapter XVII, therefore, code the appropriate E Code.

| | Codes for Record |
|---|---|
| I(a) Renal failure | 997.5 |
| (b) Surgery | E878.9 |
| (c) | |

Code to surgical procedure as the cause of abnormal reaction of patient (E878.9). Renal failure reported due to surgery is considered a complication of surgery and classified to 997.5, therefore, code the appropriate E Code.

**E878 SURGICAL OPERATION AND OTHER SURGICAL PROCEDURES AS THE CAUSE OF ABNORMAL REACTION TO PATIENT, OR OF LATER COMPLICATION, WITHOUT MENTION OF MISADVENTURE AT THE TIME OF OPERATION**

**E879 OTHER PROCEDURES, WITHOUT MENTION OF MISADVENTURE AT THE TIME OF PROCEDURE, AS THE CAUSE OF ABNORMAL REACTION OF PATIENT, OR OF LATER COMPLICATION**

These categories are not to be used if the reason for treatment is indicated or if the complication of treatment is specifically indexed to Chapters 1-16.

| Examples: Male 75 years | Codes for Record |
|---|---|
| I(a) Heart failure | 997.1 |
| (b) Gastrectomy | E878.6 |
| (c) Carcinoma of stomach | 151.9 |

Code to malignant neoplasm of stomach (151.9), the condition necessitating the treatment.

| Female 90 years | Codes for Record |
|---|---|
| I(a) Pulmonary insufficiency | 518.5 |
| (b) Surgery | E878.9 |

Code to pulmonary insufficiency following trauma and surgery (518.5). The E Code for surgery is not used since post-operative pulmonary insufficiency is classified specifically to Chapter VIII.

### E907 LIGHTNING
### E908 CATACLYSMIC STORMS AND FLOODS RESULTING FROM STORMS
### E909 CATACLYSMIC EARTH SURFACE MOVEMENTS AND ERUPTIONS

These categories INCLUDE accidents resulting directly from forces over which man has no control, but EXCLUDES those resulting *indirectly* through a second event which is classified to the causative agent involved in the subsequent accident.

Examples: I(a) Drowned
(b) Car which decedent was driving was washed
(c) away with bridge during hurricane

Code to cataclysm (E908). The drowning accident was a direct result of the hurricane.

I(a) Suffocated by smoke
(b) Home burned after being
(c) struck by lightning

Code to accident caused by conflagration in private dwelling (E890.2). Category E907 includes only those injuries resulting from direct contact with lightning.

I(a) Suffocation
(b) Covered by landslide

Code to accident due to other natural and environmental factors (E909).

I(a) Ruptured diaphragm
(b) Driver of auto which struck
(c) landslide covering road

Code to other motor vehicle traffic accident involving collision with landslide on trafficway (E815.0).

### E911 INHALATION AND INGESTION OF FOOD CAUSING OBSTRUCTION OF RESPIRATORY TRACT OR SUFFOCATION
### E912 INHALATION AND INGESTION OF OTHER OBJECT CAUSING OBSTRUCTION OF RESPIRATORY TRACT OR SUFFOCATION

EXCLUDES conditions in the above categories when reported as the underlying cause of:

485 Bronchopneumonia, organism, unspecified (507) (Pneumonitis due to solids and liquids)
486 Pneumonia organism unspecified (507) (Pneumonitis due to solids and liquids)
507 (Pneumonitis due to solids and liquids) (507)

## E913.0 SUFFOCATION IN BED OR CRADLE

This category INCLUDES suffocation of infants "while asleep" NOS.

## E929 LATE EFFECTS OF ACCIDENTAL INJURY

This category with the appropriate fourth digit INCLUDES late effects of external causes of injuries classified to E800-E869, E880-E928. The "late effects" include:

A. stated residuals or sequela of accidents

B. injuries described as old, healed or malunion of fracture

C. accidents when interval between occurrence and death is 1 year or more

D. injuries or trauma with a resultant chronic condition.

## E930-E949 DRUGS, MEDICAMENTS AND BIOLOGICAL SUBSTANCES CAUSING ADVERSE EFFECTS IN THERAPEUTIC USE

These categories are to be used only when death results from a properly administered drug or biological substance and the complication is specifically indexed to categories 995.0, 995.2, 995.3, and 995.4, Chapter XVII. These categories are not to be used if the condition requiring treatment is known.

Example: I(a) Allergic reaction
(b) Drug therapy
(c) Pyelitis

Code to pyelitis (590.8), the condition necessitating treatment.

If the condition being treated is not stated and the complication of the drug therapy is not indexed to Chapter 17, code to the complication as indexed in Chapters 1-16.

Examples: I(a) Respiratory arrest
(b) Ulcer of stomach
(c) Cortisone therapy

Code to ulcer of stomach (531.9), the complication of the drug therapy as classified in Chapters 1-16.

I(a) Allergic reaction
(b) Penicillin

Code to adverse effect of penicillin in correct useage (E930.0). When the condition being treated is not stated, and the complication of drug therapy is specifically indexed to Chapter XVII, the underlying cause of death is the appropriate E code.

## E967 CHILD BATTERING AND OTHER MALTREATMENT

This category INCLUDES deaths of decedents under 18 years of age if the cause of death certification meets one of the following criteria:

A. Specifies abuse, beating, battering, or other maltreatment, even if homicide is not specified.

B. Specifies homicide and injury or injuries with indication of more than one episode of injury, i.e., current injury coupled with old or healed injury consistent with a history of child abuse.

C. Specifies homicide and multiple injuries consistent with an assumption of beating or battering, unless assault by a peer, intruder, or by someone unknown to the child can be reasonably inferred from the reported information.

EXCLUDED from this category are deaths specified as homicide with an injury occurring as an isolated episode, and no indication of previous mistreatment; also EXCLUDED are deaths due to events such as shooting, stabbing, hanging, fighting, or involvement in robbery or other crime, since it cannot be assumed that such injuries were inflicted simply in the course of punishment or cruel treatment.

## E980-E989 INJURY UNDETERMINED WHETHER ACCIDENTALLY OR PURPOSELY INFLICTED

E980-E989 are for use when it is stated that an investigation by a medical or legal authority has not determined whether the injuries are accidental, suicidal, or homicidal. They include such statements as "jumped or fell," "don't know," "accidental or homicidal," "accidental or suicide," "undetermined." They also include self-inflicted injuries, other than poisoning, when not specified whether accidental or with intent to harm.

Examples: I(a) Fx. skull, laceration of brain and subdural hematoma
Unknown whether accidental or homicide
Code to E988.9.

I(a) Barbiturate overdose
Undetermined: Circumstances unknown
Code to E980.1.

I(a) Cerebral hemorrhage
(b) Shot self in head
Code to E985.4.

## CATEGORY NUMBERS IN THE NINTH REVISION ICD

## NOT TO BE USED FOR UNDERLYING CAUSE-OF-DEATH CLASSIFICATION

009.1
009.3
090.1
090.6
092
094.3
096
097.1
102.8
196
197
198
244.0
251.3
294.1
320.4*
320.5*
320.7*
321(.0-.8)*
323.0*
323.1*
323.2*
323.3*
323.4*
323.6*
323.7*
330.2*
330.3*
331.5*
331.6*
331.7*
334.4*
336.2*
336.3*
337.1*
350.0*
357.1*
357.2*
357.3*
357.4*
358.1*
359.5*
359.6*
362.0*
370.1*
373.4*
373.5*
373.6*
376.2*
383.3
405
420.0*
421.1*
422.0*
425.6*
425.7*
425.8*
429.4
441.7*
447.7*
456.2*
457.0
484(.0-.8)*
516.1*
517(.0,.1,.2,.8)*
564.2
564.3*
567.0*
569.6
573.1*
573.2*
576.0
579.2
579.3
595.4*
601.4*
628.1*
639
711.1*
711.2*
711.3*
711.4*
711.5*
711.6*
711.7*
711.8*
712.0*
712.1*
712.2*
712.3*
713(.0-.8)*
730.4*
730.5*
730.6*
730.7*
730.8*
731.1*
731.8*
737.4*
768.0
768.1
774.0*
777.0*
800-999(Chapter XVII)

In Chapter XI, the following 3-digit codes will be used as the underlying cause of death. The fourth digits will not be used.

640-641
643-645
650-676

# ABBREVIATED ALPHABETICAL INDEX, SECTIONS I-V

Page

A

- Abortion (630-638) 72
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